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The Journal OF THE Jamaica Agricultural Society.

The more people do the more they can do: he who does nothing renders himself incapable of doing anything; while we are executing one work we are preparing ourselves for undertaking another.

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BOARD OF MANAGEMENT.

The usual monthly Meeting of the Board of Management of the Jamaica Agricultural Society was held at the Office of the Society, 11 North Parade, Kingston, on Thursday, the 17th December, 1914, at 11.40 a.m. Present: His Excellency Sir Wm. H. Manning, K.C.M.G., C.B. (presiding), Sir Jno. Pringle, K.C.M.G., Hons. L. J. Bertram, C.M.G., D. Campbell, R. P. Simmonds and J. R. Williams, Messrs. P. C. Cork, C.M.G., R. Craig, A. C. L. Martin, Archd. Spooner and the Secretary, John Barclay.

Apologies for absence were intimated from the Hons. Geo. McGrath, and S. S. Stedman, Rev. W. T. Graham and Mr. A. W. Douet

The Minutes of the previous Meeting having been printed and circulated were taken as read and confirmed.

Matters arising out of previous Minutes:—

(a) *Re S. Manchester and S. St. Elizabeth.*—

Mr. Martin moved the motion he had given notice of at the previous Meeting, as follows:—

"That at the next meeting of the Board of Management, I intend to ask what steps, if any, have been taken by the Government for the carrying out of the recommendations made by the Committees appointed by the Board to report on the conditions in South Manchester and South-East St. Elizabeth on Neglected Juveniles and on Praedial Larceny. If not, what is the intention of the Government with regard to these recommendations?"

Mr. Martin spoke on the subject to the effect that he was disappointed that so little appeared to have been done with regard to the recommendations of the Special Committee which was appointed to enquire into the conditions existing in S. Manchester and S. St. Elizabeth, and which had sent in a full Report to the Government. He thought that steps would have been taken to give some practical assistance to the people in S. Manchester where, owing to successive years of drought, most of the coffee trees would die out within the next few years, and coffee was once their staple crop; pimento which the people in the district depended upon too, had failed them this year; praedial larceny was still rampant; nothing also had been done apparently with regard to the recommendations of the Special Committee appointed on Neglected Juveniles.

The Governor in reply said that something had been done: an Experiment Farm had been started at Lititz Savannah, which was on the borders of S. Manchester and S. St. Elizabeth; boring operations for water were going on there, but the apparatus was very inefficient, while owing to the war they could not at present afford a good drilling machine; they had to bore through solid limestone rock, they were down 79ft. and yet had not struck water, but the hydraulic engineer was still confident that they would strike it. Crops had been planted

and were being planted at the Farm, but the long drought had been a great drawback, of course. A home for Neglected Juveniles in these districts had been started by the Chairman of the St. Elizabeth Parochial Board, the late Mr. J. M. Farquharson, as an experiment, and was being conducted very economically and successfully. With regard to Praedial Larceny a mass of recommendations had been sent in, but most of them were quite impracticable for the Government to adopt. Flogging had been a very general recommendation, but at present under the Law the Resident Magistrates could order flogging if they chose, but few ever did so; if Resident Magistrates were personally against flogging they could not be forced to order it.

Mr. Cork said that flogging had been tried for 20 or 30 years ago here and had been a failure.

Mr. Simmonds suggested that the Government should get the experience of Trinidad where flogging had been tried.

Mr. Martin said that they ought to have some strict Apprenticeship Law so that young lads could be bound to an employer for a term of say 3 or 4 years: at present when employed, these lads went off just as they had learned a little and were beginning to be useful; the result was they never received a thorough training.

Mr. Cork said the very idea of an Apprenticeship Law here, would be opposed as it would savour to the people of slavery.

The Governor said some advance had been made in dealing with Praedial Larceny in the Law appointing "Authorized Persons," and this ought to help considerably.

The Secretary said in this connection he was still receiving a good many complaints of the treatment meted out to "Authorized Persons" which certainly was a severe check to their activities. It seemed that there was still considerable hostility towards the "Authorized Persons" by the regular Police and District Constables, while Clerks of the Courts and even Magistrates quibbled over the small distinction between Larceny and Praedial Larceny—although the Law seemed quite clear—and over the fees to be paid to "Authorized Persons." If the distinction between Larceny and Praedial Larceny as regards agricultural produce could be abolished, it would help matters considerably.

The Governor said that the Attorney General had had this matter under consideration and a revision of the Law on this point would be submitted to the Government.

(*b*) *Panama Disease of Bananas.*—The Secretary read the following letter from the C. S. O.:—

No. 16229-19013. 11th December, 1914.

"With reference to previous correspondence on the subject, I am directed by the Governor to inform you that the Director of Agriculture has reported, under date the 8th Current, that the Microbiologist has now examined further samples of bulb and stem of diseased bananas from "Endeavour" in Portland, and confirms the disease to be "Panama Disease," and that the Field Inspector completed the treatment last week and has been making an inspection of the district since.

2. The Director also reports that a single plant on the line of the diseased area treated at Caenwood in 1912, has been found to be affected with disease and that treatment is now being carried out by his Department."

(Sgd.) H. BRYAN,
Colonial Secretary.

The Secretary also submitted a Memorandum from Mr. Cradwick stating that the people in the district of Endeavour should be notified that cases of Panama Disease had been found there, warning them

not to take suckers from that neighbourhood and also to be careful where their labour came from, and that any outside labour should have their tools properly disinfected.

The Governor asked the Secretary to notify him to this effect.

(c) *War Gifts.*—The Secretary said that he had received a report that the first shipment of 244 packages of Oranges and Grapefruit shipped on the 9th November had arrived in good condition and had been distributed by the West India Committee of London. On Sunday, the 22nd of November, he had shipped 959 packages of Oranges and Grapefruit by the Elders & Fyffes steamer "Arracataca" to Bristol. A list of those who had supplied the fruit had been published in the Newspapers but there had been some omissions in it, but he would also publish a revised list in the JOURNAL. He had estimated that 1,000 boxes could be sent for £100; the total outlay had been £70 15s. 2½d. He had also a letter forwarded to him from the C.S.O., from the Vegetable Products Committee of London, asking if Jamaica could supply fruit and preserves to the North Sea Fleet. He had replied that we could ship Oranges and Grapefruit, also Bananas if they could be taken, and probably also Guava Jelly, which was a Jamaica speciality. The difficulty with the Guava Jelly, however, would be the jars: unless it was shipped in proper jars with screw tops and rubber bands, it would not carry well. He could get housewives to supply the Guava Jelly free, but they would require to be supplied with the jars. He had written the Government, however, stating that he had nineteen dozen 1½ and 2lb. jars, in the charge of the Permanent Exhibitions Committee, which that Committee would hand over if the Government authorized it; he had not heard yet in reply. The jars cost about £7, and the Exhibitions Committee would not require them again as they would have a balance to the credit of the Toronto Exhibition this year.

(d) *Resolution re Sugar.*—The Secretary said he had submitted to the Staple and Minor Products Committee as directed at the last Meeting, the matter of this Society sending forward a resolution to the Government here to be sent to the Home Government, *re* the Colonial preference for sugar. The papers had just been returned from circulation but he had not been able to get a Meeting yet, to frame the Report. He was directed to circulate the papers again for the Committee to frame a report.

(e) *Cassava Sticks for Dallas and Constitution Hill Branch.*—The Secretary said that a grant of £3 had been made to introduce new varieties of cassava in the Dallas and Constitution Hill Districts, suitable for the conditions there, as owing to the long continued years of drought, their usual crops were a failure. He had reported at the last Meeting that these sticks had not yet arrived although 14 days on the way, but they had come to hand on the afternoon of the Meeting in good order and had been duly forwarded to the districts. From the grant of £3, he had only spent £1 18s. 3d., and he now asked whether he could make up the balance in vegetable seeds or whether he must send more cassava sticks. He was directed to supply more cassava sticks if the district wanted them.

The following letters from the C. S. O. were submitted:—

(a) *Re Foot and Mouth Disease.*—

No. 15505-18221/14. 27th November, 1914.

"I am directed by the Governor to transmit for your information, the accompanying copy of a telegram which has been received from His Majesty's Ambassador at

Washington, relative to an outbreak of Foot and Mouth Disease in the United States of America, and to inform you that steps will be taken at an early date by an Order in Privy Council,under Law 24 of 1890, to prohibit the landing in Jamaica of cattle, animals, fodder and litter brought from that country."

(Sgd.) H. BRYAN,
Colonial Secretary.

TELEGRAM.

From British Ambassador, Washington, to His Excellency the Governor. Jamaica.

24-11.14.

In answer to your telegram of 21st November, Outbreak of Foot and Mouth Disease is stated to be worst in the history of the country ; quarantine imposed on fifteen States. Great Britain has prohibited importation of hay and straw ; and Bermuda of cattle and pigs, from whole United States. Most stringent measures have been taken to prevent spread. I should advise precautions in Jamaica.

No. 15796-18221/14. 3rd December, 1914.

"In continuation of the letter from this Office, No. 15504-18221 dated the 27th ultimo, I am directed by the Governor to inform you that, in consequence of the outbreak of Foot and Mouth Disease in the United States of America, His Eccellency in Privy Council on the 1st instant made an Order, under Section 6 of Law 24 of 1890, prohibiting, as from the 1st December, 1914, and until further orders, the landing in Jamaica of cattle, animals, fodder and litter, as defined in Law 24 of 1890 and Law 1 of 1898, brought from the United States of America. The Order was published in a Gazette Extraordinary dated the 1st. December."

(Sgd.) H. BRYAN,
Colonial Secretary.

Mr. Craig said that there existed in Jamaica a local disease commonly called Foot and Mouth Disease affecting horsekind, which was not of course the real Foot and Mouth Disease, but it was contagious, and sometimes it caused a good deal of loss in some districts. In his parish, there had been some cases, and he had asked the Inspector of Police to advise the Director of Agriculture asking for the attendance of the Government Veterinary Surgeon. The reply was, that the disease was not scheduled under the Diseases of Animals Law, and if the owner of the animals desired the services of the Veterinary Surgeon of the Department, a fee of £1 per diem and travelling expenses was payable. Mr. Craig said the Law simply said Foot and Mouth Disease, and this was a Foot and Mouth Disease, and contagious. He thought the Government Veterinary Surgeon was appointed to prevent the spread of Contagious Diseases. There were no commissioners appointed under the Law so the Inspector of Police had to take the matter in hand.

Mr. Martin quoted a case where cattle had been dying in numbers on a pen and the Veterinary Surgeon was asked to come to investigate; the reply was that unless he could certify that the disease came under the Law the Veterinary Surgeon could only go if the fees were paid. Now this was a case where it was not only the owner of the infected cattle but others around anxious to prevent the spread of a disease. How could he or any penkeeper certify what the disease was?

The Secretary was instructed to put the matter on the Agenda for discussion in the following month.

(*b*) *Employment of Lads discharged from Reformatory.*—

No. 16320-5825. 14th December, 1914.

"I am directed by the Governor to inform you that, as the result of a consideration of a report by the Board of Visitors, Reformatory Branch, Saint Catherine District Prison, the Inspector General of Prisons has submitted a proposal to invoke the aid of the Jamaica Agricultural Society towards helping the lads on discharge from that Institution to earn an honest livelihood, and I am to say that His Excellency will be obliged if the Society will be so good as to consider this proposal and communicate the results of their deliberations, for submission to His Excellency."

(Sgd.) H. BRYAN,
Colonial Secretary.

This matter was referred to the Staple and Minor Products Committee.

Arrests by "Authorized Persons."—Letter from the Inspector-General of Police was submitted, forwarding a Return of the arrests made by "Authorized Persons" under the Praedial Larceny Law, during the quarter ended 30th September, 1914, as printed on page 7.

Crown Lands.—The Secretary said he had been asked by several Secretaries of Branch Societies to print in the JOURNAL the Government Rules and Regulations with regard to the purchase of Crown Lands published in the Gazette for the information of members; they were rather long and he asked the authority of the Board first.

Mr. Craig said that the Rules and Regulations seemed to be very incomplete, and in some cases drastic, so that no small settler could be advised to take up lands under the conditions. He would suggest that a small Special Committee of the Board be appointed to go into the whole matter.

The Governor said these Regulations were not like the Laws of the Medes and Persians, and he thought the Government would be quite open for suggestions regarding them.

A Special Committee consisting of Hons. S. S. Stedman, R. P. Simmonds, Messrs. A. C. L. Martin was appointed with Mr. Craig as Chairman.

Toronto Exhibition.—The Secretary said that he had had a good many enquiries for products as a result of the representation of Jamaica at the Toronto Exhibition, and he submitted a list that Mr. Clemens had sent in: he did not ordinarily put these matters before the Board, but simply attended to them as well as he could, but there was a movement to give a small subsidy to Mr. Clemens as the agent for Jamaica in Toronto, and he thought it right that some of his work in this connection should be known.

Co-Operation, Loan Banks and the Society.—The Secretary said that he had submitted to the Instructors Committee some remarks from the Chairman of the Agricultural Loan Societies Board. The Chairman (Mr. Anderson) stated it was a matter of regret that the Society did not take more practical interest in the work of the Loan Banks and in assisting settlers to get better prices for their products. There were some minutes from some members of the Instructors Committee on the subject which he read. The matter of this Society's connection with Loan Banks had been considered over and over again. Most of the Loan Banks were grafted on the Branch Societies. They were kept quite distinct but they often consisted largely of the same members and sometimes much the same Committees, but it had been thought better for the Instructors not to become members of these Committees or to be officially connected with the Loan Banks in any way; they were still, however, to give their advice and help unofficially in any difficulties. As regards the marketing of produce this was a big subject and had to be gone carefully about.

Mr. Campbell said he thought that something should be done now as regards securing more uniformity in the quality of produce marketed by small settlers: co-operation and combination could do a lot in this direction. He thought that through the establishment of central factories we might secure the end aimed at.

A Special Committee consisting of Mr. Campbell, Mr. Cork, Mr. Bertram, Mr. Martin and Mr. Arnett, Agricultural Instructor, was appointed to consider the matter, with Mr. Campbell as Chairman.

Lectures by Microbiologist.—Letter from the Hon. H. E. Cork was read complaining that the Microbiologist had in some cases, fixed most unsuitable days for planters, for his lectures on coconut diseases. This was tabled.

Prize Holdings Competition.—The Secretary submitted a letter from Mr. Arnett stating that owing to the prolonged drought in St. Ann, the people were 3 months behind with their work, and that those who were willing to enter for the Competition had asked for the judging to be postponed for 3 months. Mr. Cradwick also asked, for the same reason, that the judging in St. Mary be postponed for 2 months. The Secretary said it would be better if the judging could be postponed, as this would make the Competition more effective. The only drawback was that he would have to carry the awards over until next financial year, and this would make some difference in the figures as to the finances which he had put forward at the previous Meeting.

The postponement was authorized as desired.

Journal Committee re Journal.—The Secretary said that the Office Committee had made a recommendation to the JOURNAL Committee to enquire whether the Government Printing Office could not print the JOURNAL on more favourable terms than private printers. He had received an estimate from the Government Printing Office, but it was higher than the contract figure with private printers. There were reasons why private printers could do this work to better advantage than the Government Printing Office—it brought them other trade in printing in connection with Shows, planters work, and so on. Again, the Government Printing Office had not the type for display advertisements and would require to get this; no advertiser would be satisfied with the same type right through. The matter was left to the JOURNAL Committee.

Half Yearly Meeting.—The Secretary said that the Half-Yearly General Meeting fell on Thursday, the 21st January, and he asked whether the same arrangements as at the previous meeting would hold good, i.e., the Board would meet on the Wednesday afternoon and the Instructors Committee at 10 a.m. on Thursday and the Half-Yearly General Meeting at 11.40 a.m. on the same day. Agreed.

Instructors.—The Instructors Reports and Itineraries were submitted and directed to be circulated to the Instructors Committee as usual.

Statements of Accounts.—Statement of Accounts was submitted and tabled.

New Members.—The following new members were elected:—

A. Beckman, Bushy Park; Manuel Espinosa, Apartado 116, Panama; George Kent, Morne Fendue, St. Patricks, Grenada, B.W.I. Aubrey Streat, Castle Hill Estate, St. Marks, Grenada, B.W.I.; Dr. Henry Strachan, C.M.G., Teak Pen, Chapelton. Thos. Anderson, Weir Pen, Mile Gully P.O.

The meeting adjourned until Wednesday afternoon 20th January at 3.15 o'clock, the usual day Thursday being occupied by the Half Yearly General Meeting.

RETURN OF ARRESTS MADE BY "AUTHORIZED PERSONS" UNDER THE PRÆDIAL ARCENY LAW, DURING THE QUARTER ENDED THE 30TH SEPT., 1914.

Parish	Names of "Authorized Persons" who prosecuted.	Name of Defendant.	Offence for which prosecuted.	Remarks.
Kingston	Nil	Nil	Nil	Nil
St. Andrew	Nil	Nil	Nil	Nil
St. Thomas	George Rennie	Albert Robinson	Unlawful possession of cocoanuts	14 days H. L. Lock-up.
,,	William Porteous	William Brown	,, ,, ,, ,,	Discharged
,,	William Barrett	Thomas Wright	,, ,, ,, ,,	Discharged
Portland	Oscar Lowe	Isaac Jackson	Unlawful possession of Guinea gras	Discharged
,,	Elias Davis	Zachariah Grant	,, ,, ,, Bananas	Discharged
,,	Oscar Lowe	Charles Robinson	,, ,, ,, Pears	Discharged
,,	Harold Patterson	Nathaniel Moore	,, ,, ,, Coconuts	7 days H. L.
St. Mary	Ezekiel Brown	John Henry	,, ,, ,, Bananas	30 days H. L. D. P.
,,	Daniel Hughes	Buahul (Coolie)	,, ,, ,, Coconuts	Discharged
,,	Robert Hird	Thaddeus Wright	,, ,, ,, Logwood	Reprimanded and discharged
,,	Amos D. McFarlane	Edward Nugent	,, ,, ,, Coconuts	Discharged
,,	William Wood	Nehemiah Patterson	,, ,, ,, Bananas	Discharged
,,	Jeremiah Gordon	Elizabeth Edwards	,, ,, ,, ,,	3 months H. L. G. P.
,,	Jeremiah Gordon	John Bryan	,, ,, ,, ,,	Discharged
,,	Jeremiah Gordon	Richard Stanbury	,, ,, ,, ,,	Discharged
,,	Jeremiah Gordon	Theophilus Ferron	,, ,, ,, Cocoas	6 weeks H. L. D. P.
,,	Rufus Linton	Jane McDermott	,, ,, ,, Bananas	7 days H. L. G. P.
,,	Frank W. Geohaghan	Jasper McKenzie	,, ,, ,, ,,	3 months H. L. D. P.
,,	Jeremiah Russell	Joseph James	,, ,, ,, ,,	7 days H. L. Lock-up
St. Ann	Nil	Nil	Nil	Nil
Trelawny	Joseph Dixon	Eleanor Donaldson	Unlawful possession of Bananas	6 weeks H. L. G. P.
St. James	Nil	Nil	Nil	Nil
Hanover	Nil	Nil	Nil	Nil
Westmoreland	Nil	Nil	Nil	Nil
St. Elizabeth	Nil	Nil	Nil	Nil
Manchester	Nil	Nil	Nil	Nil
Clarendon	Standford Henry	Ernest Miller	Larceny of growing yams	12 strokes with a rod of tamarind switches
St. Catherine	Nil	Nil	Nil	Nil

Inspector General's Office, Kingston, 27th November, 1914.

A. E. KERSHAW, Lt.-Col., Inspector General of Police.

COCOA DISEASES.

Pod Rot and Canker.

(*By S. F. Ashby, Microbiologist.*)

Pods in all stages of development are attacked. A brown rot starts as a rule, from the stem or flower end and rapidly advances up and down the pod. On the surface the brown area is sharply separated from the normal part, but internally in the wall of the pod the separation is not clear. Later the pod shrivels, turns black and hardens. In the brown stage a grey down may be seen just behind the advancing edge of the rot due to the colourless spores of the fungus borne on long delicate branches. As the pods shrivel and blacken, snow white mould and pink spots develop, due to other fungi living in the tissues killed by the real parasite, a Phytophthora. This fungus can gain entrance through the uninjured skin of the pod. If the pod attacked is immature enough for the beans to be still in contact with the wall the fungus enters and kills them; if the beans have drawn away from the wall they avoid attack and may be suitable for curing. The rot which advances from the flower end often enters the stalk and then the barl of the limb where it extends up and down, colouring the bark wine purple and causing the so-called canker. A large amount of canker starts from the cushions in this way being due to the rot passing through the pod stalks into the bark. The fungus is spread mainly from diseased pods, on which the spores form in great numbers, by means of wind, rain and insects. In infested plantations the trees will have diseased pods in one spot or another hanging through out the year each being a centre for the spread of disease. The disease is worst in wet seasons and in damp localities especially where there is poor ventilation and much shading. The fungus forms thick resting spores on and in the pods; then gets washed into the soil or mixed with it in rotting husks and become an additional source of infection. The pod rot and canker can be completely controlled by systematic spraying with 'bordeaux mixture' which should be regarded as one of the regular necessary operations in good management. Collecting and burning diseased pods except in small cultivations does not pay for itself. Trees generally set more pods than they can mature so that some on each cushion shrivel and fall at a very early stage. A serious number of these surviving young pods which the trees could mature are attacked by the rot and lost so that the crop is always short from that cause. Spraying soon after the maximum amount of fruit has set saves these young pods and secures a full crop. The grown maturing pods are equally preserved so that the proportion of 'black' cocoa picked is greatly reduced, and still further gain. It would probably pay to spray four times a year when the largest number of young pods are present. With an Alpha and large Holder Knapsack outfit one man can spray 100 trees a day and give a gallon to each. The cost of spraying 1,000 trees in labour and chemicals would not exceed £2 as a maximum and could, no doubt, be done for 30/-. Two sprayings in September, in Trinidad, at an interval of two weeks on blocks of 500 trees, compared with a like number unsprayed, yielded on two estates a net profit of £9 and £4 per 1,000 trees during the following year. As most canker patches start from the pod, spraying greatly diminishes it by preventing fresh infection. Where already present, excision

must be practised in addition. The best way to locate canker is by the black nature of the ¾ grown pods at picking time. If canker has reached the cushion the places should be marked by paint or lime so that excision may be performed as soon as work is slack. The reddish or purple bark should be entirely cut away without injuring the wood (as the fungus is confined to the bark), and the edges trimmed smooth, and the wound covered by hot coal tar. Mr. J. B. Rorer has made a thorough investigation of this disease in Trinidad and has proved conclusively that both pod rot and canker are due to the fungus—Phytophthora faberi (Maubl). I have examined the fungus from the rotting pods in Jamaica and find it to agree, both on the tissues and in pure culture, with the species described by him. The tissues rotted by this fungus are very quickly invaded by a number of other fungi of which Colletotrichum Cradwickii (Bancroft) is most conspicuous here; these successors of the Phytophthora have mislead several investigators of canker, who falsely concluded that one or another of them was the primary cause of disease. I have recently examined two cases of diseased cocoa branches showing both the conidial and perfect fruits of the fungus, Sphaerostilbe musarum, which causes the Bonnygate Disease of bananas. The branches bore the purple canker patches due to the Phytophthora and both these places and the normally coloured bark tissues, well beyond them, was penetrated by the black bordered rhizomorphs of the Sphaerostilbe. Both samples were from cocoa growing among bananas attacked by the disease so that spores from the latter were carried to the cocoa pods, probably starting attack on the canker spots but also spreading in the bark beyond them. This finding supports the suggestion made in the description of Bonnygate disease that the fungus came originally from a woody plant. The following paragraphs are from Rorer's paper (Bull. Dept. Agr., Trinidad No. 65, July 1910.) When the tissues of the pod at the stem end have become well invaded by the fungus the mycelium runs back into the cushion either through the bark or the central woody cylinder of the stem of the pod. If it has gained entrance to the tree through the thin bark layer of the pod stem it generally spreads out in all directions so that the whole cushion and surrounding area of the bark becomes cankered; but on the other hand if the mycelium grows into the tree through the woody part of the pod stem the cushion may not become cankered. The mycelium will extend in narrow lines for some distance up or down the stem in the cambium layer, but sooner or later will grow outward into the bark and then spread out rapidly forming larger cankered areas. As the tissues of both pod and bark are killed by the advancing margin of growth of the Phytophthora mycelium they are quickly invaded by a number of rapidly growing fungi, as mentioned above which produce spores very quickly on the diseased tissue. There can be no question that these fungi aid in the rapid disintegration of the already diseased pod tissues and are responsible to a certain extent for the characteristic appearances of cankered bark, but that they are not parasitic and cannot even attack tissues which have been wounded menhanically, has been proved by a larger number of inoculation experiments. A large number of inoculation experiments, made by the writer with pure cultures of Phytophthora, proves conclusively that this fungus is the cause of the common cacao podrot and of the disease known as canker, and that the diseased pods serve as the chief source of infection of the tree.

PRENENTIVE MEASURES.

"To control the pod disease two methods have generally been recommended. One is, to gather and destroy all pods as soon as disease is noticed on them, and to husk 'black cocoa' apart from the sound, and to burn, bury or lime all the husks; the other is, to prevent disease by spraying. Methods similar to the first have been frequently recommended for the control of a large number of fruit diseases, but from the fact that it is impossible to gather and destroy all the fruits, of whatever kind, as soon as they become diseased and that the fungi causing disease of this type produce spores within a very short period from the time of the first infection, the method is of a theoretic rather than a practical value. It has long since been given up as a means of controlling such diseases as brown rot of the peach, bitter rot of apple, black rot of the grape and other fruit diseases. Moreover a number of Trinidad planters who have tried this method as a means of controlling the cacao pod rot have told the writer that though the disease was reduced to a certain extent the cost of the labour used in collecting and destroying the blackened pods was in no way compensated for by the increased return from the general pickings, so that they gave up the method after a short trial. When the fact is considered that in the rainy season a pod may become infected and completely rotted within a week or ten days and that within three or four days from the time of infection hundreds of thousands of spores are produced, each one of which in germinating liberates from 10 to 30 smaller spores, each capable of reproducing the disease, it can be readily understood how futile it is to attempt to check the disease by gathering and destroying the diseased pods. The method of control by spraying, which has proved so successful in combating similar diseases in temperate climates, is undoubtedly the best to use against pod rot. Although a sufficiently large number of experiments have been carried out, either in Trinidad or elsewhere to make it possible to give the best recommendations as regards to time of spraying, mixtures to use, etc., yet the work which has already been done shows conclusively that the disease can be controlled by spraying, at a reasonable cost, that is at a cost which is more than compensated for by the increased yield. Up to the present time the writer has definite results from two sets of experiments. During the past eight months 2,125 more sound pods have been picked from 500 sprayed trees, than from 500 adjacent unsprayed trees, and the sprayed trees have yielded in total 1,608 more pods. Twenty-five per cent. of the cacao from the unsprayed trees has been 'black', while only 9 per cent. of that from the sprayed trees has been so. At some future time perhaps when estates are perfectly drained and cacao is grown without shade much less disease will be met with, but until that time comes, both canker and podrot must be controlled by spraying.

DIEBACK.

"In this disease, the younger twigs begin to die and shed their leaves, and a grey brown rot advances in the bark and outer wood down into the branches and the trunk, finally killing the tree. This rot, which is dry and fibrous in the older parts causing the bark to separate easily from the wood, is due to a fungus—Lasiodiplodia, which is common on dead wood and pod shells in cocoa walks. The fruiting berries burst through the bark as black pustules and discharges great numbers of large oval pores at first colourless, later brown, with

a dark line across the middle, when the disease reaches a cushion bearing pod the fungus grows through the stalks into the walls and cavities of the pods, forming a white growth over the beans and a brown rot of the pod advancing to the flower end. The pods later becomes hard, shrivelled and black and bear the fruiting pustules of the fungus. The treatment consists in prompt pruning away of the diseased twigs and limbs and burning them. The pruning must be done well in advance of the discoloured bark, or fungus may be left to continue the rot. The larger cut surfaces should be treated with coal tar. The trees appear 'stag headed' in this disease, a condition which can also be caused by poverty of soil, wind, drought or root disease. In these cases if twigs are cut lengthwise, the dead brown bark is found to cease sharply against the living; in dieback-disease the transition from dead to living is gradual. Trees in well drained, weeded and mulched soils resist this disease which is a sign of neglect.

ROOT DISEASE.

"This is caused by the same fungus rotting the roots especially in ill drained or heavy soils. The leaves become sickly, begin to die from the margins and finally fall away and young pods fall or cease to develop. The disease often shows at isolated points in a plantation. The attacked trees should be felled and a trench dug around them about 2 feet deep and 16 inches wide at a distance of 9 feet throwing the soil inwards. This measure is carried out to prevent possible spread through the soil. Attention to drainage and forking should be given over the whole plantation.

THRIPS.

"The leaves and pods frequently suffer rather severely from attacks of these insects especially in dry weather. The leaves show brown patches and strips following the midribs and main veins while the pod becomes russetted. The species in question (Heliothrips rubrocinctus) is easily recognized in the larval and pupal stages by the presence of a broad red cross band on the otherwise yellow body. The larvae move about freely on the undersides of the leaves puncturing the tissues with their beaks and sucking out the sap while the pupae collect in small colonies and do not move. The adult insect is black with fringed wings. All stages may be found on the under sides of the leaves and the characteristic way in which the larvae and the adults move about with the tail end raised and supporting a large drop of the dark liquid excreta can be seen easily. If the insects are not found, attack can be inferred from the brown strips and the small dark patches of the dry excreta scattered over the under sides of the leaves and pods. If marked injury is being done the leaves and pods should be sprayed with an insectide, such as kerosine emulsion, the ingredients of which are cheap and easily obtained. The spray must be applied with force at close quarters from the finest nozzle and care taken to cover the undersides of the leaves. The works should be done in still air and all parts of the trees covered but the spray should not be applied too long at one place as large drops may form, run down the trunk and injure the surface roots. It should be repeated two weeks later to deal with the next brood as the eggs are not all killed by the spray.

———:o:———

BURGUNDY MIXTURE.

The following extract is from the *New South Wales Agricultural Gazette*:—

"Experience in some parts of Ireland has shown the superiority of Burgundy Mixture, in which washing soda replaces the lime, and the following extracts are taken from a leaflet published by the Department of Agriculture and Technical Instruction for Ireland:—

Tests spread over five years in that Department's Agricultural Stations showed, that while the use of Bordeaux mixture gave an average increase of 34 cwt. per acre over the unsprayed plot, the use of Burgundy resulted in an increase of 50 cwt., and in each of the five years the Burgundy was the more effective, while in other cases the balance has been slightly in favour of Bordeaux.

METHOD OF PREPARATION.

Burgundy mixture is made in the following proportions:—

2 lbs. sulphate of copper of 98 per cent. purity.
2½ lbs. washing soda of 98 per cent. purity.
10 gallons clean water.

In many cases farmers use a barrel of 40 gallons capacity for preparing the mixture. For this amount four times the above quantities will be required, viz:—

8 lbs. sulphate of copper.
10 lbs. washing soda
40 gallons of water.

The preparation of the mixture should be set about in the following manner:—

Thoroughly wash the barrel and pour into it 35 gallons of clean water. The 8 lbs. of sulphate of copper should then be put into a canvas bag or tied up in a piece of canvas cloth, and put into and moved about in the water in the barrel until the crystals are dissolved. This operation can be more quickly accomplished if the crystals of copper sulphate have been previously ground.

Having prepared the solution of sulphate of copper, next dissolve the 10 lbs. of washing soda in 5 gallons of water in a separate vessel. Then pour the washing soda solution slowly into the copper sulphate solution in the barrel, stirring continuously. The mixture should then be ready for use."

(Bordeaux mixture is troublesome to make and unless the right kind of lime is used—temper lime, which is not easy to get—it is not of full value, perhaps of little value for the purpose for which it is intended. If the making is left to servants it is very much a delusion and a snare to call the result Bordeaux mixture. So the owner is compelled either to make the mixture himself or to stand over the servants and watch while they do it. We are asked whether there is not a made-up mixture which can be purchased, so that all required is to add water. We see that in Ireland and New South Wales, as well as in France, where Bordeaux mixture originated, there is too what is usually called Burgundy mixture which has the same effect apparently as the Bordeaux mixture, if not slightly better, and it is much easier and simpler to make.

We asked the Microbiologist for his opinion on this as several correspondents have asked whether Burgundy Mixture was not cheaper,

and better and easier to make than Bordeaux Mixture. It may seem curious in a country of limestone formation, but it is a most difficult thing to get Temper Lime, and slaked lime is not of much use for making Bordeaux Mixture.

Servants cannot be trusted to make these mixtures and what planters are asking for is a ready-made mixture which will only require the addition of water. There are plenty of such preparations on the market and experiments might be carried through to prove their relative efficiency and cost. Bordeaux or Burgundy Mixture which is a fungicide can also be made an insecticide by the addition of Paris Green or Arsenate of Soda. But we feel sure that most planters would rather buy a ready-made proprietary mixture of proved efficiency if it could be got at a reasonable price. This we can now get either in paste or powder form.)—ED.

DEPARTMENT OF AGRICULTURE, JAMAICA.

I return, herewith, your extract about making Burgundy mixture. It is more expensive than Bordeaux mixture; for the latter 5 lbs. bluestone are sufficient for 50 gallons, but the burgundy requires more than half as much again. Washing soda is more expensive than lime, pound for pound, and it requires three times as much to make 50 gallons.

The Burgundy may be preferred on delicate foliage, but it has weak sticking power and could not resist a tropical rain. It takes as much trouble to prepare as Bordeaux.

It may be used as a more expensive and less effective substitute for Bordeaux where it is impossible to obtain recently burnt quicklime. For garden plants with delicate foliage it might prove useful as the materials are easily got, but Bordeaux has many advantages for spraying on an agricultural scale.

S. F. ASHBY,
Microbiologist.

:o:

ONIONS.

(BEING A PAPER READ ON "ONION GROWING IN VERE"—NOVEMBER 5TH, 1914, BEFORE THE VERE BRANCH OF THE JAMAICA AGRICULTURAL SOCIETY BY MR. ARCHIBALD SPOONER.)

The Onion plant is a native of the southern part of the north temperate zone, where it is to-day largely grown, consumed, and exported, but it has been introduced and modified by cultivation in the northern parts of the temperate zone so as to bear crops of onions of a smaller kind more suited to growth in a colder climate than its natural home. In the tropics the onion is grown under more or less unnatural conditions, so much so, that the writer knows of no true onion that will bear seed in the tropics, and of only one or two varieties that will produce a true and well formed bulb. The seed that produces onions of better quality and shape than any other under tropical conditions is generally admitted to be the so-called "Bermuda" onion. The name given to this onion is only on account of its having been largely grown in Bermuda for export to the United States. The seed from which these onions are raised is not grown in Bermuda, but comes from the Canary Islands, which are situated off the north-west coast of Africa in latitude about 28 North. This appears to be about the most southerly point, north of the equator, at which oninions produce seed, and this no doubt accounts for the onions growing well in tropical climates, where the conditions as to soil and rainfall are favourable. It is important, then, to get good fresh seed from the Canary Islands, especially as onion seed loses its power of germination very quickly in the tropics. The onions in the Canary Islands apparently produce seed about the end of July or beginning of August, so that it is

possible to get fresh seed in the West Indies before the middle of September. The importance of obtaining seed early is very great where the export of onions to the markets of the United States is concerned. The great point in shipping onions to this large market, is to get them into the market before the growers of Bermuda, Texas, Cuba and other places get in their onions, all of which are raised from the same Canary Island seed obtained at the same time, with suitable soil and rainfall conditions it may be said that the warmer the climate the faster the onions will grow, and therefore the lowland areas of Jamaica have a good chance of competing for the early New York Market. Onions here generally take 170 days between the date of sowing and the date of harvesting, so that seeds sown on say September 15th, will give onions to harvest at the end of February to the first week in March. As a rule, the New York Market will be pretty bare of supplies of Bermuda onions at this time, and so a large demand is often found, and good prices are obtained. Towards the end of March to the end of May, enormous quantities of these onions come into the New York Market, from Texas especially, and much lower prices result. If you grow onions for export therefore, grow them early. Texas onions are grown in the arid district on the Mexican border and raised entirely by means of irrigation from the Rio Grande.

Now as to the land.—In the tropics Bermuda onions will grow on any kind of land as long as it is well drained, the only difference between good land and poor land will be that the onions will be smaller and harder on poor land and larger and softer on rich land. Too much rain also makes a larger and softer and less saleable onion. Too little rain makes very small hard onions, the same as would be produced by the right amount of rain on poor land. New York wants large Bermuda onions so that it is best to choose fairly rich land for growing them on. In the tropics it is not a good plan to manure land for onions, the manure makes the land too open, and the onions, even if they grow well, will be too sappy and thick necked and of bad keeping quality and unsaleable shape. Of course, I refer to pen manure; on poor land the use of Sulphate of Ammonia may help onions along if used in small quantities. In cold countries onions are liberally manured, no doubt to render the soil warmer, but this is not necessary in Vere, we get all the warmth we want naturally. The best land for onions is a loamy soil inclined to be silty or sandy rather than clayey although on well tilled well drained clay loams excellent onions can still be produced especially if the soil contains a high percentage of lime and becomes friable on top when it dries. A clay soil that cakes quite hard on top whilst it remains wet and soapy just underneath is no good for onions. Such a soil would have to be thoroughly drained and treated with crops of Cowpeas and heavily limed or treated with sand before it would do well in onions. The general plan of procedure in sowing onions would be as follows:—

About the beginning of August choose a nice piece of loamy land, sandy rather than clayey and near to a pond or well. Avoid if possible land covered with leaf-mould because this would not be compact enough for a seed bed. A piece that has no cocoa grass on it is preferable, and almost essential as cocoa grass is the worst weed on an onion seed bed and cannot be eradicated without damage being done to the young seedlings. I have found that where Guinea Grass has been growing thickly cocoa grass will generally be absent, so a good seed bed can be made out of a piece of land where Guinea Grass has been growing well.

Dig up the land with a hoe about 4 or 5 inches deep and eradicate all the weeds. Work over the land with a hoe about once a week, getting the surface into very fine tilth, but do not go deeper with the hoe than about 2 or 3 inches. As long as you have about one and a half inches of well tilled clean soil on top at the time of sowing the seed this is all that is wanted, for onions like a firm seed bed underneath, not a loose open one. In preparing the land all sticks, trash, dead grass, etc., must be carefully removed, the land should be quite free of anything that would prevent the soil compacting before the seed is sown.

About the beginning of September mark out the land into beds about 3 feet wide leaving paths between the beds, but do not raise the beds more than 2 or 3 inches above the level of the paths, in fact let the path act as surface drains without making the edges of the beds too dry. The young onions can then be weeded by standing on the paths without treading on the rows. If the land is dry you must then begin to water it with a watering can provided with a rose, so as to compact it and to cause all the weed seeds to germinate, in fact it should be watered almost every day for about a fortnight before the onion seed is sown, and also be kept quite free from weeds. The rows for planting out the onions should be opened along the beds just before sowing the seed. The best way to do this is by a string and pegs, the string being stretched along the beds and the rows marked off with a pointed stick held against the string. It will be little use putting the first row of seed closer than 6 inches from the edge of the path as the soil there would be too loose and dry and the

onions would only dry off and die. You can get 5 rows of onions 6 inches apart on a 3 feet wide bed and the beds can be made any length you like. A central path down the middle of the seed bed plot is useful for carrying water or for holding water casks which can be filled by a pump placed in a well or pond close by, if this can be arranged. The rows should be marked out about three quarters of an inch deep and 6 inches apart. The seed should be sown at the rate of about 90 seeds to the running foot of row. One ounce of seed contains about 9,300 seeds, so that one ounce will sow about 103 feet of row or rows. These seeds will not all germinate however, you will be lucky if 80 per cent. of them germinate. You can regulate the size of your seed bed by bearing in mind that you want about 100 running feet of row, or rows, for every ounce of onion seed you sow. After sowing the seed in the little furrow three quarters of an inch deep you must firmly press in about half an inch deep of the moistened earth, with the knuckles. Be sure and press the earth as tightly on to the seed as possible; this is very important. At the same time see that the rows are not left in deep furrows by the pressing; if the soil is only just moist this will not be the case. When a bed is sown give it a fairly good watering with a watering can having a fine rose, and then cover it up with trash for 5 days to keep off the sun and keep in the moisture. On the 6th day take off the trash and on the 7th day the young onions will be peeping through the soil. Give them light waterings early in the morning and late in the evening, not whilst the sun is hot. Now you must look for ants and caterpillars. Look for every ants' nest near the bed by following the string of ants and pour some kerosene down into the nest, this will soon make them leave you alone. Carbon Bisulphide is even better than kerosene. Caterpillars are best dealt with by light dustings with Paris Green and lime mixed 5 parts of lime to 1 part of Paris Green. Remember that nine-tenths of the trouble in raising onions here lies in the great care necessary in the seed bed. Under any circumstances, you will lose by far the greater portion of your young onions by the effects of sun, drying winds, heavy rains, ants, attacks of nematodes and fungi, caterpillars, etc. If you get one fourth of the seeds you sowed to give you onion plants fit for planting out you will have nothing to complain about. You will still have 2,300 plants from 1 ounce of seed, and you will probably lose 12% of these in transplanting, or between transplanting and harvesting, leaving you say 2,024 onions at the harvest from 1 ounce of seed. This means at least 380 lbs. of onions per ounce of seed or about $2\frac{3}{4}$ tons of onions from 1 pound of seed. You may do better than this, at all events you will have plenty of onions to look after. About 70 days after sowing, the onions will be fit for transplanting. In dry districts do not transplant until the largest leaves are as at least as thick as a slate pencil.

Now about the planting out of young onions.—The land should be forked about 9 inches deep, at least, two months before the young plants are ready to be put out, so as to allow it to get compact before the planting out time comes. The great thing to bear in mind is that whilst onions like a well tilled soil they do not like a soil that is loose in texture below the surface, or rather they do not in loose texture soil give the good hard well formed bulbs that buyers like. A good early forking will get out all the weeds and allow the roots to rot, and render the land full enough of plant food for the onions. When planting out time comes, the land should be perfectly free from weeds, with a fine tilth on top and fairly compact below. Line off the land just as you did the seed beds leaving walks about every 3 or 4 feet and mark out the rows, say 6 inches apart. Make holes with a pointed stick or dibble 6 inches apart and one and a half inches deep. Dig up the young onions from the seed bed, cut off the tops to about 4 inches long, take the earth from the roots and carry them in a shaded basket to the planting out field; plant them as quickly as possible in the new spot and after planting out give each onion a little water if the soil be at all dry. The plants may look rather sorry for themselves for the first week or so after planting out but as long as they have enough size in the bulb part when they are planted out, they will soon recover and go on growing again. Nothing more is necessary but to keep the onions carefully weeded, keeping also the first half inch or so of the surface of the soil in a loose condition so as to form a mulch to conserve moisture. Where cocoa grass comes up it is necessary to use a knife for weeding. The surface of the soil can be kept loose by stirring it with a bent piece of sharpened hooping or by a carefully used Dutch hoe with a blade not wider than 4 inches. Practically all the weeding amongst onions has to be done by sitting down in the pathways or by kneeling on them, a tedious business, so that the cleaner the land is made before planting out the onions the lower the weeding bill will be. Onions never come to anything if the land is allowed to grow weeds so that every attention must be paid to the weeding. If the young onions are set out on cane banks of replant land, the land should be banked at least two months before planting out time and kept weeded as clean as possible. The tops of the banks should then be flattened with a beater if they have not become compact by rain or weeding. The tops of the banks should then

be lined off marking from the centre line first and three rows of onion plants should be dibbled in, making the rows 6 inches apart and spacing the onion plants in the row from 5 to 6 inches. About 100 days after planting out, the onions will be fit for lifting which is indicated by the tops dying down. After planting out it is good practice to water the young plants by hand if there seems a chance of their dying out from drought, but once they have really taken root they need very little water and if any rain falls in December, as it usually does, it will be enough to carry the crop through. Irrigation water should, however, be available in the case of a very dry year, in which case one or two light irrigations, by running the water down the furrows intended for cane planting will be found to ensure a crop.

Taking 3 rows of onions to each cane bank and banks 5 feet apart 396 onion plants will go to the running chain along the banks or 52,774 plants to the acre. These less say 12% loss will give 46,000 onions per acre, and taking these at an average of 5 onions per pound would give 9,200 lbs. per acre or about $4\frac{1}{10}$ tons onions per acre.

If you get a penny a pound for the onions, which is as much as you will be wise in figuring upon, for exportation, that is a penny a pound on the estate, the value of the produce of an acre will be about £38 5s. od. per acre or about the value of 76 tons of cane per acre at 10/- per ton for canes. When the onions are ripe they should be pulled up and allowed to lie on the ground for a day or two, if the weather be fine, for the tops to dry more fully. They should then be carted to a house or shed (a trash roofed shed will do and it can be open at the sides and ends) and there they should be laid on racks made of wire netting or else put on a dry trash-covered floor. Do not heap them up but take every care to dry them in the shade and in a good current of air. In a week or so the tops will be quite dry and the onions will have a dry skin on the outside which will protect the rest of the bulb. Pull off the dry tops preferably or cut them off with a knife if they are thick necked and then grade the onions into several sizes, say three sizes. Pack them in standard sized onion crates, which are articles of commerce, and measure 2′ x 7½″ x 1′ 5″ outside measurement. These hold one bushel of onions each and the bushel weighs from 50 to 58 lbs. according to the size of the onions; the small dry hard onions of course pack closer than the large ones and weigh more. In packing turn the root end of the bulbs to the slats of the crate and put all the largest onions against the slat. Fill in the centre of the crate with onions of suitable size to fill up all the spaces, as far as possible, and take care to have the crates as tightly packed as it is possible to pack them. In spite of the drying they have had they will shrink before they reach New York, and if they arrive in a loose condition they will get damaged by bruising and begin to rot and then buyers will not look at them unless they are re-packed in New York, the cost of which is about as much as the onions sell for. Buyers are used to getting crates as full as they will hold and so they must be shipped rather fuller than they will hold, so to speak. Be sure and nail up the crates well and turn out a neat and attractive looking package.

For keeping onions for domestic use do not pull off the tops but select the smaller harder onions, say about 2 ounce ones, and when the tops are dry plait the tops into a rope and hang them up in a cool airy cellar. They will keep for 5 or 6 months, this way and be perfectly good to eat at the end of this time. Onions can I believe be made an industry worth going in for in Vere but they must be grown for export, there seems to be little demand for Bermuda onions in Jamaica, the only onions used here being the strong flavoured hard seasoning onion. Onions seems to be hardly used and so far there has not been much sale for them. At the same time any export trade that might be created would be entirely ruined if Bermuda onions growing here fell into the hands of careless growers or exporters. Unless Jamaica can send away first class packed, well cured onions, and no others, a bad name may become attached to Jamaica onions and then the export business would rapidly come to an end.

My advice to people thinking of growing onions on a commercial scale is not to do so unless they are prepared to do everything thoroughly and put in plenty of hard work, care and patience. They are a risky crop and an expensive crop to grow but still it is quite possible to clear £20 to £25 an acre on them at a penny a pound nett sale price on the estate. In the Island of Antigua, onions are being grown by the sugar planters on the banks of early prepared replant land, the best lands being those at or near the junction of the clay and limestone formations. The rainfall is generally a low and uncertain one but still generally enough for onions as the lands retain moisture well and are thoroughly well cultivated and drained for cane growing. The seed beds are usually placed near to a pond. The onions are graded and packed and exported by a Co-operative Association of the planters, and this Association has agents in the United States and Canada who can direct shipments and see that fair prices are paid for the produce sent them. To meet the fullest measure of success

Jamaica onions should be handled in the same manner. In every instance co-operation amongst producers results in better prices being obtained than would be got by independent action on the part of sellers, and this further co-operation with selling agents results in greater safety against the danger of sending on perishable produce like onions to a market perhaps already temporarily overstocked.

(Sgd.) ARCH. SPOONER.
5/11/14.

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MEASLES IN PIGS.

"MEASLY PORK."

Sometimes pork is offered on the markets here, which is mottled looking. This is known as measly pork and there are people who will buy it. Of course any Medical or Sanitary Officer would condemn measly pork as unfit for food if he saw it, but this pork (and meat generally), is offered for sale by itinerant butchers anywhere so that there is not much check on it. In the interests of public health the trade of a butcher is an important one, and should be under some regulation and restriction—such as a Butcher's License.

In order that our readers may understand exactly what measly pork is, and the danger of it, we give the following information:—

This is a parasite disease, due to the presence of small "bladder worms" or "measles" in the substance of the muscles. They are termed bladder worms on account of the resemblance they bear to little sacs or bladders. Technically, they are known as *Cysticercus cellulosae*. These organisms, when consumed by man, as they sometimes are with pork, develop into tape worms, and should the eggs of the tape worm find their way back into the pig, they in turn will give out bladder worms. The young bladder worms, when hatched, bore their way through the bowels of their host, and ultimately reach the muscles, where they attain their full development.

The measle or bladder worm, therefore, is to be regarded as a young tape worm, requiring to pass from the pig into the bowels of the human subject in order to complete its development. Measly pork, it will be seen, is one means of conveying tape worms to man, and should not, therefore, be used as human food unless thoroughly cooked.

It is very difficult and as a rule impossible, to recognise the presence of measles during life. Pigs infested by them suffer in various ways, depending upon the organ in which the parasite is located. In many cases they fatten notwithstanding the presence of large numbers, which are only recognised when the carcase is cut up. We have seen the liver studded with them throughout, and the flesh to contain a considerable number without ill-health being induced, and we have known half a dozen when located in the brain, to occasion violent fits and death. When large numbers infest the muscles, the animal moves stiffly and shows signs of soreness. The body wastes and the appetite falls off. There is general dullness and indisposition to move.

Should the liver be extensively affected at the same time, these symptoms are aggravated and the bowels become irregular, being at one time constipated, and at another, loose. The skin may also become yellow, owing to functional disturbance of the liver.

Nothing can be done to this affection in the way of cure. The parasites are embedded in the substance of the flesh, and cannot be destroyed by any known medicine. Where they do not kill the patient, they will in time die, and later on become changed into little white

gritty particles. To prevent it pigs must not have access to the excrement of man in which tape worm exists.

The disease is not often seen in Great Britain, but in Germany and some other parts of Western Europe, where pork is consumed in a partially raw state, tape-worm in man and measles in pigs are common ailments. And this is also the case in Jamaica. Never eat doubtful pork and always cook any part of the pig to be eaten, thoroughly.

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PIGS.

"Can you say if you know where I can get a "China" Boar? I want to see if I can get a short breed here, which will fatten quickly. We have around here a large long bodied breed of pigs which though they grow to a fairly large size take such a lot to feed them that they hardly pay to keep. People are asking for the "China" breed now because they fatten much quicker and are easier sold to the small butcher. If you can get one for me, kindly state price, etc., and I shall be much obliged."

CORRESPONDENT.

Browns Town.

We get queries like this very often now. It would be a pity if the old type of "China" pig became quite extinct. It is nearly so; we have only of late noticed very occasional specimens of the type. If some of these could be collected, and we could get an Essex Boar imported (this breed being nearest the old type) we could breed back the type quickly. Failing that, sows and boars of as near the type as possible would require to be collected by some one interested, followed up by some years of patient breeding and careful selecting. Few would have the patience.

To other correspondents, especially those who have written about breeding up-to-date breeds, by which is meant the excellent modern breeds of England and the United States, we will say that the circumstances of the great majority of those who breed pigs here are entirely different from farmers in the countries named, where food is usually abundant on farms, especially bye-products like separated milk, butter milk and whey which are uncommon here—whey not at all—and the aim is principally to produce the bacon hog. The aim here is to get a pig that will grow easily on such foods as are common here, that will not be a 'rover', but contentedly graze in a pasture and balance its starchy diet itself by feeding on worms, beetles, etc. The greatest demand in the country is for a pig that will within a year be ready for the local butcher's very local trade; the latter cannot afford and cannot sell a £3 or £4 pig.

Then most people somehow like a fat pig, both in their taste and for the fat to be rendered into lard. Last year we imported £7,574 worth of lard, and this has been gradually going up as our old type of pig was more and more bred out.

Now no one must run away with the idea that we are "running down" the big breeds of pigs; they are wanted by many, and we have them here already. The large Black pig kept at the Stock Farm has its uses. It is a good grazer, but as it grows to a great size, naturally it needs a large amount of food; and as it was bred as a pork pig to supply a large amount of lean meat, it cannot do that if it is not fed

properly. It is a true dairy pig. Anyone having separated milk or butter milk in plenty or who can turn pigs into a field of Cowpeas and has, generally, "good feeding" can make money supplying a town trade with pork; or for killing at Easter, August and Christmas holidays. The Large Blacks are exactly the opposite of our Old China pig.

The Poland China, if of a good strain, not the Show type of that breed, but the farmer's type, is somewhat between the two but not exactly, as the breed is inclined to be long bodied. It is a hardy breed and can adapt itself to "pot luck" feeding pretty well, that is taking what it gets and can pick up, without particularly good feeding. We have followed the history of this breed closely for some 17 years here, and it is a good one for our circumstances

On the other hand our readers must not get the idea from our mention of the usefulness of the short bodied pig under certain circumstances, and for certain requirements, that it has no drawbacks whatever The short legged chunky type of pig has faults. The shoats often get too fat by the time they are 6 months old, to breed; the sows have smaller litters than the long bodied breeds; the sows with their short legs more often overlie their young than the larger breeds. In crossing the long bodied breeds and the short bodied type, therefore, the sow should be of the larger breed.

There are of course other breeds of pigs, but these three are the kinds we are most interested in here, and they supply three different types.

What our Branch Societies should do is to read all the late articles in the JOURNAL on Pigs, and discuss well the circumstances and needs of their district as regards this domestic stock.

* * * * *

The diet in time largely influences the type and those interested should be careful if they are looking out for and selecting pigs of the "Old China" type, that they do not make the mistake of taking degenerate, hollow back specimens of the large breeds run small through poor feeding and poor breeding for several generations, as the right type. The back should be straight, the nose short and the ears cocked, not hanging, except a little, as the former type can hardly be got.

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WAR FUND.

It was suggested to us by the St. David's Branch of this Society that our Branch Societies should have a War Fund of their own. We therefore sent out a Circular on the 8th of September conveying this suggestion to the various Branches and stating that we should be glad to act as Treasurer. We suggested that as there were other funds to which members would probably be contributing, the Branches should contribute from their Reserve Fund. The Branches took up the matter enthusiastically and there has been a good response. It would have been better, however, if this Fund—the Branch Societies War Fund—had been kept distinct from all other local Funds and all contributions from Branches sent through us. Somehow, however, several Branches sent their contributions direct to the Central War Fund and some others sent them in to their Parish Fund.

The following are the Branches who have sent us contributions to the Branch Societies War Fund:—

Main Ridge	Clarendon	1	5	0
Prospect	,, ,,	1	0	0
Kellits-Chapelton	,, ,,	1	0	0
Mahoe Hill	,, ,,	2	4	0
Brandon Hill	,, ,,	1	1	0
May Pen	,, ,,	0	15	0
Hanover	Hanover	5	5	0
Mizpah	Manchester	1	1	0
Maidstone	,, ,,	1	0	0
Craighead	,, ,,	1	10	0
Rural Hill	Portland	2	0	0
Coopers Hill	,,	3	5	0
Birnamwood	,,	1	0	5
Fairy Hill	,,	1	0	0
Black Hill	,,	2	2	9
Drapers	,,	0	10	6
Avocat	,,	1	0	0
Fair Prospect	,,	1	1	0
Troy	Trelawny	2	3	0
Stewart Town	,, ,,	5	0	0
Upper Trelawny	,, ,,	8	8	6
Darliston	Westmoreland	3	3	0
New Roads	,,	1	1	0
Whitehouse	,,	2	0	0
Sav.-la-Mar	,,	20	0	0
Dallas & Constitution Hill	St. Andrew	1	10	0
Cambridge-Woodford	,, ,,	1	10	0
Bloxburgh	,, ,,	0	10	6
Central St. Andrew	,, ,,	1	4	0
Port Royal Mtns.	,, ,,	2	2	0
Moneague	St. Ann	2	2	0
Clifton-Newstead	,, ,,	1	2	0
Gibraltar	,, ,,	1	0	0
Guys Hill	,, ,,	1	1	0
Claremont	,, ,,	1	0	0
Tryall Hill	,, ,,	0	6	0
Lucky Hill	,, ,,	1	1	0
Mount Industry	St. Catherine	1	0	0
Waterloo	,, ,,	0	10	0
Brown's Hall	,, ,,	0	15	0
Upper St. John	,, ,,	1	1	0
Glengoffe	,, ,,	8	2	6
Southfield	St. Elizabeth	1	1	0
Mulgrave	,, ,,	1	0	0
Nain	,, ,,	0	10	0
Santa Cruz Mtns.	,, ,,	20	0	0
Lacovia	,, ,,	0	10	6
Ginger Hill	,, ,,	5	4	0
Appleton	,, ,,	0	10	6
Maldon	St. James	1	4	0
Cambridge	,,	1	0	0
Montpelier	,,	2	0	0
Mahoe Hill	St. Mary	1	0	0
Enfield	,, ,,	2	2	0

Albion Mtn.	St. Mary	2	0	0
Hampstead	,, ,,	0	10	0
Marlborough	,, ,,	1	5	0
Oracabessa	,, ,,	3	18	6
Mount Regale	,, ,,	1	0	0
Upper Metcalfe	,, ,,	1	4	0
Lower St. Davids	St. Thomas	£1	5	0
Trinity Ville	,, ,,	5	5	0
Whitehall	,, ,,	1	1	0
		£149	2	8

Windward Branch, Hanover, sent 81 boxes of oranges as a War Gift to be included in our shipment for the wounded in the Military Hospitals in Great Britain and France, as their contribution to this Fund.

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CRICKETS.

(Report on Crickets from Glengoffe made to the Director of Agriculture by the Government Microbiologist.)

Some specimens were sent on by the Secretary Agricultural Society from Mrs. Northover, Glengoffe, they were stated to be killing her vegetables. The species was probably Anurogyllus antillarum (Sauss). They are greedily eaten by fowls and turkeys. They also gather under heaps of dry grass or leaves and may be caught in that way if such traps are scattered in the garden near plants likely to be infected. If fowls, etc., can be excluded the following mixture scattered around attacked plants has been found useful:—

Half barrel fresh horse droppings, one pound salt, one pound Paris Green, mix thoroughly.

(Sgd). S. F. Ashby,
Microbiologist.

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COCONUTS.

(Report on sample of diseased Coconut Bud from Aeolus Valley, St. Thomas.)

The samples were forwarded by Agricultural Instructor Hanson with letter of explanation dated 17th December. The property belongs to Mr. Samuel Burke and appears to adjoin Lloyds. Mr. Hanson states that the tree was about six years of age, just coming into bearing, and one of a group of well grown and promising young trees. A dwarfed leaf without blades appeared about a year ago followed by two others which withered prematurely; more recently the leaves around the heart yellowed and withered. When cut open the upper part of the cabbage showed a stinking rot; the stem and roots seemed normal. The material received consisted of the bud chopped away well above the top of the stem; the youngest leafstalk at the centre was soft and stinking and discoloured sodden patches showed on the upper sides of the enclosing limbs; there was evidence of recent attack by weevil borer (Sphenophorus sericeus) and jumping fly maggots had invaded parts of the rotten tissues. The nature and odour of the soft rot indicated a typical case of budrot which had apparently been working into the heart for some months. The dwarfed leaf without foliage, which appeared a year ago, did not prove budrot present at that time; it is often attributed to beetle (rhinoceros) but nobody has been able to assure me yet that beetles have been found actually

at work in such cases. I consider it a symptom of "eaten leaf diseases" a fungus spot disease which attacks the ribs or blades of the leaflets in the bud. Eaten-leaf should be treated by throwing into the heart a mixture of blustone (sulphate of copper) (*not* agricultural bluestone) and slaked lime in powder. The other young trees should be protected from budrot by throwing the same mixture into the hearts and within the strainer or syringing in a bordeaux mixture of twice the usual strength; this should be repeated in three months time.

(Sgd). S. F. ASHBY,
Microbiologist.

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HOUSEHOLD NOTES.

FOOD.—The true value of a food is not the composition shown by chemical analyses, but what the stomach can use after the energy necessary for the process of digestion is taken out. A food may be rich according to analysis, and yet he so heavy and indigestible, that the human cannot utilise the nutriment. The processes of digestion are delayed and so much energy consumed in dealing with the food that the man is not helped with energy and strength as he should be, and could be with food lighter and easier of digestion.

This explains for instance why porridge—whether of oatmeal, wheatmeal, cornmeal, barley, or rice has been such an effective diet in the labour of every country using such; and explains why the boatmen of the Amazon whose capabilities for strenuous and continuous labour has been commented upon by many travellers there, are enabled to do this. Their principal diet is Furinte or Farine (made from Cassava) which we have found to be very easy of digestion and for man and beast a satisfactory and a nutritious food.

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VARIOUS METHODS OF COOKING.—STEWING.—Stewing is generally defined as a gradual process of simmering in a small quantity of liquor. From the point of economy, this form of cooking should be best understood because it is the least expensive and most nourishing way of cooking. The advantage which stewing can claim over boiling or simmering is that the more nourishing and soluble elements are not separated from, but served up with the meat, the full flavour of which is thereby preserved. Stewing is one of the most economical methods of cooking meat, because the coarser and cheaper parts, which cannot well be used for roasting or boiling, can by slow continuous stewing be made tender, palatable, and nutritious. The meat selected for stewing should be lean. This method of cooking entails little loss; all the juices which come out of the meat amalgamate with the gravy or sauce, which is served with the meat. Very little fuel and attention are needed to cook a stew after it has started cooking. The heat must be slow and gradual, never reaching the actual boiling point, and the scum must be removed occasionally. Only enough liquor is used to cover to prevent evaporation. Tough meat, unsuitable either for roasting or boiling, can be made tender and palatable by stewing. There are two ways of stewing known and practised: The first is partly frying or browning the meat before stewing, and the second is parboiling. A close covered sauce pan, or a fireproof casserole, is the best utensils for making stew. The cooking may be done in an oven or over the fire.

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WHY A BAKED POTATOE IS THE BEST.—Potatoes are such familiar articles of food now that hardly anybody considers it a problem to be able to cook them properly. Yet there are good and bad ways of preparing potatoes, and probably the bad ways are the ones most frequently used. The principle value of the potato is in its starch content, but it is valuable besides on account of its mineral salts and tissue-building ingredients. In order to get full food value out of the potato, we must cook it in such a way as will retain all of these valuable food elements. It is a bad practice to peel potatoes, because by exposing the part directly under the skin—which is the most valuable part of all—most of its important ingredients are lost. The best way to cook potatoes is to bake them in their "jackets" in an oven of 450 to 500 degrees Fahrenheit. When the potato is taken out of the oven it must be pricked with a hot fork or broken at once, to permit the escape of the steam which

has generated in the cooking process, and which will otherwise condense into water and make the potato soggy and indigestible. By doing this there is no chance for the food elements to escape, and if the potato is scraped out well from the skin (where lie the potash salts) pretty full food value will be secured. These potash salts help to feed the cells of the body, and are, of course, very valuable. Never cut open a baked potato; always break it, otherwise it will be soggy and barely fit to eat.

The next best way of cooking potatoes is to steam them in their jackets. Potatoes cooked in this way are delicious, and if the peeling is done carefully very little of the nutriment is lost. Another good method is to boil the potato in its jacket. This takes less time when either of the above methods, prevents any slow dissolution of good material from the potato, and preserves the flavour.

Because potatoes are so lacking in fat, proteid, and mineral matter it is becoming the rule to serve them with meats, and to prepare them so as to introduce the food constituents they lack. People who want to keep thin should not eat too many potatoes, for the large amount of starch they contain has a tendency to produce obesity.

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To bake Irish potatoes quickly, boil them in salted water for ten minutes, then put them in the oven. The boiling water will heat them through, and they will bake soft.

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When boiling an old fowl or tough meat, add a piece of soda to the water. Simmer gently, and the meat will be perfectly tender.

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When boiling water in a vessel without a lid, so as to keep the smoke out, place a piece of wire just across the top. This catches the steam and keeps the smoke out of the water, and your tea will taste nice made in an open billy-can.

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POISONS—FIRST AID.—Poisons of many descriptions, which have been intentionally or accidentally taken, may almost instantly be rendered harmless by simply drinking half a pint of sweet oil. A person with a strong constitution might take more.

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POULTRY NOTES.

In the nights of rain that have occurred is some districts regularly during November and December, it is safe to say that those hens that are under shelter will be laying well when those roosting on trees are checked if they have already commenced laying early, or will be delayed starting if they have not already commenced, all under conditions, such as feeding, being equal.

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The first batch of chickens for the season will soon be appearing. One of the mistakes of those who do care for their chickens well, is over anxiety to feed the little chicks almost as soon as hatched, and much mortality takes place through overfeeding. Nature has provided a chicken with enough food to carry it for 36 hours or longer after hatching without food, for just as the chicks are on the point of hatching they draw up the remains of the yoke in the egg into their bodies. Therefore there is no hurry to feed: all that should be done is to put the hand gently under the hen to see how many chicks are hatched, remove the eggs not hatched and the empty egg shells. The eggs not hatched should be gently chipped against a hard sharp substance—a sharp stone for instance—holding the hand well away in case the eggs is rotten and bursts. Any egg that on being opened is rotten and evil smelling, has been fertilized; those eggs that are found quite clear and fresh have not been fertilized. As explained in the JOURNAL before, there are many reasons why eggs set may not hatch, even though fertile. The hen may have had too many eggs to cover and

some have got chilled: she may have been off the nest too long such as a whole night—a whole day in this climate would not kill all the undeveloped chicks but would kill the weakest,, and might affect the rest badly; a half hour is enough for a hen to be off her nest: the germ may have been weak to start with, through the cock having too many hens or being old and weak or sick, or the hen may be too old but this seldom happens; a bad line is a common cause of infertility in both sexes; the eggs may have been too old or if kept only a week or 10 days have been allowed to lie on one side only, when the whole contents of the egg settle towards that side and although germination starts, the embryo cannot develop: or the eggs may have been kept in a place exposed to breeze, which evaporates too much of the moisture out of an egg and the embryo cannot then develop, although germination may start.

We shall deal with foods next month.

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COMMENTS.

PRIZE HOLDINGS COMPETITIONS.—Because of the long drought in both parishes, the judging in St. Mary and St. Ann has been postponed and will take place, in the former in March and in St. Ann in April.

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MEMBERS.—There are a good many people who write the Society for information, who are not members of this Society, who are not even members of a Branch Society. Surely they ought to become members.

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FOOT AND MOUTH DISEASE.—The serious outbreak of this disease among live stock in the United States is being rapidly got under control and, with the advent of severe frost, it is expected, will quickly be put an end to.

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CASSAVA STARCH.—Germany did the largest trade in Starch of any country in the world, owing to their enormous production of potatoes. Their exports of starch have now entirely stopped, and so there ought to be good prospects for Cassava Starch.

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MEETING.—As intimated in the JOURNAL for November, the Half-Yearly General Meeting will be held on Thursday, 21st January. Notices were sent early to the Branches in order that they might consider whether they could send a delegate, and if so appoint one.

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INDEX.—The Index of the JOURNAL for January to December, 1914, will be issued separately. To be economical we do not print the same number as of Journals, but any reader who saves all his Journals, wishes an Index for ready reference, and does not get one, should write us for one.

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GUINEA CORN.—We shall have plenty of White Guinea Corn for planting from March on. This grows luxuriantly, but does not bear till January next. The seed of Red Guinea Corn is still so scarce that we have only a small quantity of imported seed available at 3d. per large packet.

DIARIES.—We hope every reader has supplied himself with a Desk Diary, 2 or 3 days on a page in order to note all that it is necessary should be recorded, for future reference. Small settlers who do not yet keep Account Books will find a Diary with money colums an excellent medium to make a simple beginning in book-keeping

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SEED CORN.—Many people were writing us for Seed Corn at the end of December to the beginning of January owing to the good seasons that were prevailing intending to plant then, but owing to the demand from August to October, which we were not even able to supply, we could not carry over any seed. The new crop does not come in until the end of January, and owing to the late planting, we will not be able to supply seed until the beginning of February. We shall have some good seed then but our chief supply will not be available until the end of that month to be ready for the March planting.

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SOY BEANS.—We have again imported some Soy (or Soja) Beans, of which such large quantities are now being imported into the United Kingdom from China, Manchuria and Japan. This bean has been the mainstay of the Japanese for the protein in their food; they make vegetable cheese from it. It is exceedingly rich in protein and oil. We sent out some of this bean some years ago. It succeeded in the mountains but failed in the lowlands. The variety we now have ought to succeed in the lowlands. This bean would be a good addition to our food crops. We will send out this to introduce it at 3d. per large packet.

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RAT KILLING COMPETITION.—The Cambridge Branch of this Society in St. James held a second rat killing competition with excellent results. Mice were also included in the Competition. Nineteen persons competed and the total number killed in the quarter, from the 5th September to the 5th December, was 611 rats, 308 mice. The 1st prize was awarded to Walter Wakeland who had a total of 274 rat tails and 230 mice tails. He was a long way ahead of any others.

We hope other Branches will take up this Competition. It is real, useful work to destroy as many rats as possible. We have often given figures estimating the amount of damage they do to agriculture.

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COCONUTS.—There is little demand at present for Coconuts even at a low price. The dry nuts do not keep for long, so the best plan is to turn them into Copra, which is the commercial term for the dried kernals. The Coconuts are simply split open and the kernels scooped out in as large pieces as possible. They are then dried in the sun or in a Dryer—and that is Copra.

This product can be kept for a long time, on the chance of the price going up again, but we are afraid this will not be until the war is over. As we import £23,000 of Cotton Seed Oil (which may itself be scarce next year) we think it would pay growers of Coconuts, especially the smaller ones, to make oil of their nuts. There is usually a good local demand for Coconut Oil. It pays to manufacture it at even 9d. per quart.

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CORN MILLS.—The new corn crop will be in some time at the end of January and the middle of April, and although late planted in most places which may effect the crop, it will be a fair crop. Some of the

Branch Societies have been equipping themselves with corn mills so that their members may make their own cornmeal more expeditiously than by the beating out process. But corn mills are handy beyond the making of cornmeal for use in the household. No whole corn should be fed to horses or fowls; it should be roughly cracked; in doing this some fine meal results and this can be sifted out before it is fed to fowls, otherwise, it might be wasted on the ground. The quantity sifted out can be used for dog feeding. We can give information about corn mills. The trouble with some of them is that the metal used is soft and the grinding parts do not last long. We have been trying to get a suitable mill the grinding parts of which are made of very hard metal, and we are getting samples of the different kinds advertised. Of course we refer to hand mills. When it comes to power mills there is not much trouble in getting large ones with hard metal.

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TICKS.—There are some properties that have been made almost clear of ticks within the last few years. There are other properties still infested, large ones too—and there are many proprietors who still use the antiquated tar brush or a piece of crocus bag to apply crude dressings. It seems a most extraordinary thing that men of positions and education are still content to allow their pastures to be infested with ticks so that no one of their household can venture into them; keep their cattle miserable, their growth delayed and their final value reduced, all because they will not rouse themselves to make an effort. In these days when hand spray pumps costing 12/6 are available and various simple, very easy to be procured, and easy to be applied preparations which we can guarantee to be effective against ticks, as advertised in this JOURNAL, and with the Department of Agriculture prepared to send out a special mixture—it is amazing that there are men who still daub parts of their cows occasionally with gas tar. The matter is serious enough in the interests of the Island to warrant compulsory measures being taken to reduce the tick pest. We read that several States in the Southern United States have been declared free of ticks after com- pulsory measures have been adopted tor some years past to get rid of them.

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SUGAR.—Great Britain in 1913, consumed two million tons of sugar 80 per cent. of which was beet sugar from the continent of Europe, none of which will be forthcoming in 1915, so that over a million and a half tons of cane sugar, additional, will require to be furnished this year unless the people in the United Kingdom have to go very short. That they will go short is undoubted, as scarcity of an absolutely necessary product means a high price.

A large proportion of the sugar imported into the United Kingdom is for use in making preserves, in which there is a large trade. Dear sugar means dear preserves, and a great falling off in consumption. There will certainly be no extravagantly high prices for sugar, as people would simply do without high priced sweets,preserves, &c., and use a minimum of sugar in their tea and coffee. The whole supply of sugar from British sources, if it could be commandeered, would only provide 550,000 tons. If the price of sugar rules high in Great Britain, it follows that it must rule high every other place. The sugar used in Great Britain is mostly refined sugar; that is after the cane sugar leaves Jamaica or other country of production, it is refined into a crystal, or fine sugar; after this process there are two bye-products—treacle

and syrup, the former (principally used to feed cattle although it is also used by human beings) and a fine golden syrup often used in place of jams or jellies. Sugar made in Jamaica by the centrifugal process is partly refined that is what we are called Brown and White Albion, and it is sold locally at a figure based on the price abroad. At the present time that is very dear 3d. to 3½d. in the country for White Albion. Much of the sweetening, however, required by the poorer people is got from the sugar made in open boilers here by small settlers, who grow small areas of sugar cane. This sugar is put up in tins (kerosine tinsize) and this is often sold very cheap—at present 4/- to 7/-, according to locality—called "wet sugar."

In the parish of Manchester sugar is sold in another form called "head" sugar, otherwise the same wet sugar boiled thicker, ladeled into round tin shapes where it hardens and is sold in blocks called "heads" at 1d. to 1½d. each now. The "heads" run about 1¼lb. in weight, at present, so that this sugar is sold at not more than 1d. per lb. or £9 6s. 8d. per ton. We pointed all this out to our Branch Societies and suggested, that as the local markets were easily glutted with wet sugar and head sugar where sugar estates were not within reach, to buy the former to manufacture with their own, the more experienced could drain their wet sugar and so make dry sugar which could be sold in the local shops; this would also let free more estate sugar for export. At the price of good dry sugar compared with wet sugar, this seemed practicable.

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FOODSTUFFS.—When over 25 millions of men, a goodly portion of whom are engaged in agriculture, and who instead of being producers become larger consumers than usual, are withdrawn from their usual vocations; when a whole country, and that one of the most highly productive as Belgium was, and parts of other countries, producing foodstuffs, are laid waste; when large quantities of foodstuffs are destroyed as is inevitable in war, it should follow that there is likelihood of some of the primary foodstuffs being scarcer and, so, dearer than in pre-war times. On the other hand, there are countries shut off from their usual imports of foodstuffs, and they must do as they can with what they have, with less variety and probably in time with less quantity to eat too, so that the supplies usually got by these countries are diverted into those with open ports. No one in August and September could tell what might have happened, but thanks to the British Fleet, the seas have been kept open and Jamaica at any rate has suffered very little inconvenience. Still, nearly all imported foodstuff are much dearer than in pre-war times and nearly all our own products which are sold abroad are cheaper.

In response to our circular to Branch Societies, issued immediately after the outbreak of the war, pointing out these facts and the advisability, as a wise and economical precaution, of producing as much food of our own food as possible, very strenuous effort has been made in this direction, in spite of continued drought in St. Ann and the Eastern parishes, so that no planting could be done in the parishes in August and September and little in October. There will be a larger amount than usual of yams, sweet potatoes, cassava peas and corn, ready from March to June next. Then the banana trade has become dull and as the other native foods mentioned are not in great supply yet, a larger amount of bananas than usual are available and being used

Readers should remember not to waste bananas, but peel them when full (not using a steel knife) cut into chips, dry, and store them; the dry chips can be ground into meal any time in a corn mill, and used for porridge or pap. We are using banana meal regularly and we found it served at breakfast in the country house of one of the largest cocoa planters in the Island, whom we visited lately to look over his fine cultivation. At least one member of the Board of Management uses it regularly in his household.

Keeping up the planting of food crops and especially look ahead and prepare ground to plant large crops of corn. Imported American corn and oats are much dearer and such horse and cattle feeds as bran and middlings are very much dearer also. We have a local market of £50,000 to work upon additional to what we supply already; that is the amount we pay for imported corn.

Planting of corn, sweet potatoes, cocoes, etc., enable us also to feed pigs cheaply and the Island is short of pigs now owing to scarcity of feeding during these last 7 years.

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QUERIES AND ANSWERS.

We published a question in the JOURNAL for December, which asked how scorpions could be got rid of in a house.

We have had two replies. One says that croaking lizards prey upon scorpions; therefore encourage these lizards.

Many people however, hate the presence of croaking lizards, but they are harmless.

The second reply is very interesting and would excite smiles if published in full.

It is to the effect that if cock roaches are got rid of the scorpions will disappear, as roaches are their chief food. Therefore poison the roaches which is easily done. A bait harmless except for roaches, mice and rats can be made up of one part of Plaster of Paris mixed with 3 or 4 parts cornmeal, placed in little heaps or in saucers or tins where the roaches will get at it. Sweetening with fine sugar will make this bait more attractive.

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NOTES FROM CORRESPONDENTS.

PIGS.—I planted out 4 acres of corn as a result of your circular *re* Foodstuffs, and am looking forward to a very good crop.

I am thinking of indulging in a pair of pigs, having been much inspired by your article in the November JOURNAL. Can you secure a boar and a shoat for me for about 50/-? I would like a pair of the Essex strain that like grass, as I can fix a run for them. Very great interest is now taken in the JOURNAL and a few persons have been asking me about these pigs. An early reply will oblige.

(Sgd). G. W. M.

Ulster Spring.

GUINEA CORN.—The white is a sight to see. 50% is 12 ft. high with great massive heads. None of the field is less than 8 ft. So far I am glad to say the birds have not troubled me, and as the ears are all practically filled out with grain I am hoping that I shall escape them this time. I intend cutting in February only the ripe ears leaving the stalks to send up the secondary ears which they are beginning to already; is this correct?

I have a measured acre in *the Red* which is a failure, germinated badly though planted in the same way, seed treated with Kerosene and ashes, and what has grown is only 4 ft. high, very weedy and ears poor. Still I shall replant again in March for another trial.

A. R. T.

Brown's Town.

CORN.—The seed I got from you has grown splendidly, it had perfect seasons and could not have borne better. I shall be breaking it in early in February as it was planted on the 15th September.

CORRESPONDENT.

Brown's Town.

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BRANCH NOTES.

BLOXBURGH (St. Andrew).—The regular monthly meeting should have been on the 23rd November, but on account of heavy rains the meeting was not held. A meeting was held on the 30th instead; probably through the Instructors presence being not known as also througb the disappointment of his early visits, caused a small number of members to be present; bowever, we had a small but encouraging and satisfactory meeting. The present conditions of the district on the same range as Dallas was discussed. Mr. Hanson was for the planting of cane, urging that this valuable product should be looked after immediately, as also sweet potatoes and gungo peas, which will help well in times of scarcity, as foodstuffs; he explained to us the value that comes or can be had through the working of cassava in these dry districts chiefly in times of scarcity; of Irish potatoes and beans, naming the different varieties to plant as suitable food stuffs, all these will help as quick food crops through the prevailing droughts which happens so often in these districts; and in consequence of the lengthening of the war. We have asked for some cassava sticks, and potato slips as we are now in the time of planting, and we desire some good breed that will bear quick. Please inform us how to get these up here and if the department will pay the expenses toward helping us. Mr. Hanson has promised to look after the other things such as cedar and other plants at his next coming up. Meeting adjourned. S. ROBINSON, Secretary.

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GUYS HILL (St. Anns).—The montbly meeting was held on the 26th November, the meeting having fallen through the previous week. There were present, the two vice-Presidents, the Secretary and eight other members. It was reported that the Superintendent of the Parochial Board of St. Ann had come to look at the streams in the District; pollution from which this Society has been seeking protection, and the matter being before the Board, Mr. Allen has been deputed to get the names of persons living on the borders of the streams in question. Circulars from the Secretary of the Parent Society *re* War Fund, War Gifts and Sugar, as also from Mr. Cradwick, Instructor, *re* his visit, and Prize Holding Competition were read. The gifts of citrus fruit to the soldiers of our Empire being dealt with, Mr. E. G. Pullock said he would give 1,000, Mr. Allen 1,000, Mr. Wm. Brodber 300 grapefruit. The opinion was expressed that people outside of members of the Society will give freely if approached. Messrs. Allen, Martin and Pullock promised to give their help in the packing, etc., the last named gentleman also promised to cart the shooks up from Linstead free. The Secretary was instructed to find out from Mr. Barclay how far the central fund will go towards meeting the expenses. Mr. Cradwick wished to know whether there wre any competitors of the Prize Holding Scheme from this Branch, the Secretary was informed that Mr. W. Brodber has decided to compete and was instructed to inform the Instructor. The Secretary was asked to write to the Surveyor General for information *re* Crown Lands in the Swift River District of Portland—price per acre and terms. It was decided to let the election of a President lie over till the beginning of the financial year, the vice-Presidents acting meanwhile. W. E. WATSON, Secretary.

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SPANISH TOWN (St. Catherine).—The annual general meeting of this Society was held on Wednesday, the 2nd December. Present: Revd. W. Clarke MacCalla (President); the two Vice-Presidents, the Treasurer, the Secretary, and six other members. Report of Committee of Management was read and confirmed. The election of officers to serve during the year commencing 1st April next, was now proceeded with, with the following results:!—Rev. W. C. MacCalla, President; Messrs. W. Gentle and D. A. Aldred (Vice-Presidents); Everard Lopez (Secretary); C. S. Soares (Treasurer). The Rules of the Branch were approved *en bloc*. Read

Circular from the General Secretary *re* Cane Sugar, which is referred to a Committee for consideration, with a view to formulating and submitting a scheme for taking up cane cultivation. Mr. Russell deplored the fact that the Branch could not contribute to the Agricultural Society's War Fund, and advocated the getting up of a Show to popularize the Society and at the same time raise funds. The meeting adjourned until the 6th January, 1915. EVERARD LOPEZ, Hon. Secretary.

STURGE TOWN (St. Anns).—There was a fair number of the members present on December 18th, even when it rained so heavily. Mr. A Arnett, the Agricultural Instructor, with his assistant, Mr. Rennie, gave addresses. Mr. Arnett roused the spirits of the members to fever heat when he shewed the usefulness and the place, that agriculture now occupies. A hearty vote of thanks was given him. Mr. Rennie's address, though short, was encouraging. S. J. PALMER, Secretary.

MT. INDUSTRY (St. Catherine).—A meeting was held on the 3rd December; there was a very good attendance. Mr. Hanson was present and pointed out to the meeting a very serious case of "bud rot" in a coconut tree. He addressed the meeting urging the cultivation of such crops that will be in readiness early last, year. A case of fowl sickness was dealt with, and an interesting and useful discussion on "Yard Sanitation" led by Mr. L. A. Davis was held. The discussion will be continued at next meeting. Mr. Lawrence, teacher of Mt. Industry School, became a member. The Instructor agreed to give a lecture on the cultivation of Cassava when next he visits the Branch. R. SIMEON ANGLIN. Secretary.

RURAL HILL (Portland).—The regular monthly meeting was held in the School-room on 29th December, 1914. Present: Rev. S. I. Moodie, President, in the Chair; L. A. Wates, Esq., (Instructor), twenty-six other members, the Secretary and three visitors. Cane cultivation:—An answer from Mr. Henshlewood that he is willing to rent cane lands, provided there are not less than twelve persons to start with, as he will have to put up a mill on a convenient spot. The Instructor advised those persons to co-operate that everything may be done in a fair way. A debate started by Mr. George Sinister and others that a pig is more profitable than a goat. There were twelve persons for the goat and thirteen for the pig, which carried. This made the meeting lively and bright. The Instructor also cautioned about Panama disease in bananas, that as soon as it is seen in our fields it must be reported to him, for it is a dangerous disease. He also informed us that Mr. Barclay can get a rooster of the Plymouth Rock or Orpington breed for the Branch. Two new members were enrolled. Richard Panton and Edward Neily. Received one shilling and a penny for a grindstone. Correspondence from Mr. J. Barclay was read towards the sending up a delegate to the Half Yearly Meeting, after which meeting stood adjourned by singing the National Anthem. A. A. FLEETWOOD, Secretary.

WILLIAMSFIELD (St. Catherine).—At a meeting held here on Thursday, 3rp December, 1914, the following members were present: P. R. Ingram, (V.P.); the Secretary, H. L. Mossman (Instructor) and ten other members and a few visitors. The Instructor held a Demonstration at Mr. Taylor's. They were many good lessons taught in the pruning of Cocoa and Coffee, in which the members were deeply interested. They urged on the Instructor to return at an early date. The Instructor spoke on the War and encouraged the members to guard against the hardships of the time, advising them that sweet potatoes, peas, beans, etc., should be planted in abundance. He also referred to the pumpkin seed, which Mr. Taylor bought from the Society; it has proved a great success, only a 3d. spent, has already made a profit of 19s. 9d. One dozen pumpkins were brought to the meeting as samples The members were much pleased; the Instructor bought one for 2/- which weighed 34 lbs., the balance was shipped to Kingston. There are a fairly good number still left in the field for harvesting. The next meeting is fixed for the first Thursday in January, 1915. The Secretary moved a vote of thanks to the Instructor for his valuable services which was unanimously carried by all the members. Meeting adjourn.

D. E. TAYLOR, Secretary.

COOPERS HILL (Portland).—The regular monthly meeting was held on the 3rd December, 1914. The following members were present: Messrs. D. S. Morris' Vice-President, presiding, ten other members, and the Secretary. As arising from the minutes the reply from the Hon. S. S. Stedman to a letter and copy of resolution sent him *re* "rent of Crown Lands" was read. He promised to try his best in the matter. Mr. Barclay's advice on the same matter was also read. Mr. Mossman's scheme on Cooperative Societies, which appeared in the November JOURNAL was next read by Mr. R. J. Valentine. Most of the mem bers present thought the scheme a good one which would work well especially with regard to obtaining good prices for cocoa. A paper by Mr. Edward Valentine on "How to improve the Society financially and otherwise" was read by the Secretary as Mr. Valentine being indisposed, could not attend. It was, however, thought that the question being an important one and the attendance having been rendered small by the inclemency of the weather, discussion on the question would better be postponed for another meeting. It was decided to call a special meeting to deal with the question. This was fixed for the 17th December. The meeting then adjourned.

J. E. BROOKS, Secretary.

GINGER HILL (St. Elizabeth).—The monthly meeting was held at Ginger Hill on Thursday December 3rd, 1914. There were present, twelve members and three visitors. Mr. G. L. Salmon, V.P., presided. The Chairman gave a few brief remarks. Matters arising out of the minutes, *re* roads: the Secretary showed the absolute necessity of a new road to be constructed into the District, branching off from the mainroad at Ginger Hill, leading across the Railway on to Ipswich via Merrywood, for the convenience of the people who are taxpayers and cultivating on Merrywood. By not having any road, they have to be walking on the rail road, which costs them unnecessary expenditure whenever they are prosecuted and brought before the Court. A resolution was passed at the meeting, that a petition be drawn up and sent to the Parochial Board at Black River for the construction of a new road. Authorized persons: Mr. Roderick Jones reported that the inhabitants are behaving themselves honestly and there is no work for Authorized Persons at present. The Chairman exhorted members to pay up their arrears. The subject of the death of the Hon. J. M. Farquharson was brought before the meeting and the members were moved with sympathetic feeling for the great loss of their Hon. Member, who always acted promptly in time of necessity. The Chairman said he wanted to purchase three books for the benefit of the Society for cultivating purposes. The National Anthem was sung and the meeting adjourned until 7th January, 1915.

R. L. GORDON, Secretary

CENTRAL ST. MARY (St. Mary).—The regular monthly meeting was held in the Clonmel School Room on Thursday, the 3rd December. Mr. J. A. Banks, President, presiding. Present were: Messrs. Gunter and Watts, Assistant Instructors, Rev. Coore, the acting Secretary, seven members and a few visitors. The President spoke on the matter dealing with the rearing of stock and asked that persons owning goats and pigs who were desirous of improving the breed of their stock, be asked to send in their names, so that the Branch could get a census of the animals in and around the district, when arrangements could be made for the securing of a Boar or Ram for service. The President asked that all the members, who made promises towards the War Fund, be asked to send in their subscriptions as early as possible. It was also suggested that any amount received be sent to the Secretary of the Parent Society in the meantime. Read correspondence from the Secretary of the Parent Society stating he could not promise to insert *all* the Branch Notes sent in. Owing to the increased cost of paper, 10—15 pages of the JOURNAL had to be cut. It was reported to the meeting that 250 sugar cane tops were sent by the Hon. Director of Agriculture to the Branch. Members who required plants of this cane, must send in their names to the Secretary. Messrs. E. W. McLean, S. Richards and L. Johnston, of Clonmel, became members and paid up their fees. Mr. Watts gave a lecture on the Panama Disease which broke out in the parishes of Hanover and Portland. He said he was informed that Mr. Cousins visited one of these spots in Portland and had it enclosed and disinfected. Mr. Gunter informed the Branch of a lecture which

is to be given at Annatto Bay on the 15th by the Entymologist, Mr. Ashby, and at Port Maria on the 16th. He also encouraged the Prize Holding Competition in January. F. A. WILLIAMS, Actg. Secretary.

CAMBRIDGE (St. James).—The regular monthly meeting was held on Saturday, 5th December. Besides Mr. E. E. Myers, Senior V.P., in the chair and the Secretary and Instructor, there were 15 other members and some visitors present. Messrs. W. Wakeland and Edward Brissett were elected as new members. The Chairman informed the meeting that he had got the broken handle of the grindstone replaced by a new one, costing 1/6, and he would send the stone to the Secretary's yard soon for protection. Mr. Briscoe reported that he had sent off 47 boxes oranges and grape fruit from the Branch and 33 from Mr. Edwards, Montpelier, for the Military Hospitals in Great Britain and France. We expect to send some more in January next. A letter was read from Mr. Barclay informing us that our Branch took 3rd prize for bananas at the late Toronto Exhibition. Mr. Briscoe pointed out that this part of the Island had done well in bananas as no less than 5 of the Toronto prizes had come this way. Another letter from Mr. Barclay informed us that the next half yearly meeting of the society will be on Thursday, 21st January. It will be decided next meeting whether or not we will send a delegate to it. The Secretary submitted the Report of our second Rat-Killing Competition. It showed that 19 persons competed, and 611 rats and 308 mice—total 919—were destroyed. Mice were not intended to be included in the competition, but a record of them was kept for information and comparison; but if included the results for prizes are the same. The following are the donors and prize winners: 1 Mr. Briscoe's, Walter Wakeland, 274 by 230 equal 504; (2) Mr. Fletcher's, Edwin Martin, 132 by 47 equal 179; (3) Mr. Kerr's W. Reid, 66 by 3 equal 69; (4) Mr. Chambers' Joseph Medley, 40 by 1 equal 41; (5) Mr. Shirley's Little 7 year-old Doan Irving, 27 by 13 equal 40. The result was on the whole considered good. Mr. Briscoe said a few words on the Panama Disease showing the symptoms and urging on members to report it promptly should any suspicious case come under their notice. Mr. W. Reid suggested that a fruit combine for the District to enhance proper cultivation and curing, and the sale of our products should be formed. The matter was well discussed and a committee was formed to go into its details and report at next meeting. The meeting closed with the singing of the National Anthem. R. M. ARNOLD, Secretary.

BRANDON HILL (St. Andrew).—A meeting was held in the Schoolroom on the 7th December, 1914. The Chair was taken by the President, Alex. Allen, Esq: Mr. A. P. Hanson, the Instructor for the District, was also present, as also were five other members, and the Secretary. It was a rainy day, and the Agricultural Instructor spent threefourths of his time in demonstrating on the premises of Mr. Roderick McLaren, accompanied by many of the members of the Society. The following motion was put forward by the President:—Resolved, that the Secretary writes to the Secretary of the Parent Society, asking for the rates as regards to the selling of Crown Lands, and that they be inserted in the next issue of the JOURNAL. Five tools were bought for the use of the members of the Society, and the Instructor explained at full length the use of them. He gave an able address on the growing of cocoa. Reference was made to neighbouring districts where cocoa was in very bad and sickly condition, suffering from various diseases and injuries; and by the keen attention given them upon his instructions to the settlers, there has been a marked improvement. He showed how cocoa-trees could suffer from injuries created by other trees and man. Wood-ants and red-ants are also harmful creatures, and these could be got rid of by rubbing the diseased parts with tar. The Bordeaux mixture was next spoken of, and by spraying the trees with this mixture, the harm done by fungus would cease. A vote of thanks was accorded the Instructor for his able address. The meeting was then brought to a close by the singing of the National Anthem. CHAS. E. KELLY, Secretary.

WINDSOR FOREST (Portland).—The postponed monthly meeting was held in the Schoolroom on Monday, the 7th December, 1914. Present were: Jno. Panton, Esq. (President), 15 other members, several lady visitors and the Secretary. The minutes of the 5th October were read and confirmed. Arising from the minutes,

the President enquired whether the Parochial Board has fulfilled their promise according to their letter of the 13th October, 1914, respecting the inspection and improvement of the W.T. Water Hole. The Secretary replied in the negative. The matter was then discussed and agreed to wait on the Board's time. The President enquired of the steps taken by the members, and the district in general, with regard to the planting of sugar cane and other crops. Several members and the Secretary spoke, informing the President that there is marked improvement noticed and every member is planting cane. It was proposed that the Secretary should write the Secretary of the Parent Society in reply to his letter of the 19th October, to the Branch Societies *re* War Funds. After the finances were gone through the meeting adjourned with the singing of the National Anthem, to the first Monday in January, 1915. C. A. SMITH, Secretary.

BROWN'S HALL (St. Catherine).—A meeting was held in the Schoolroom on Wednesday, 9th December. There were present: The Rev. G. L. Young, President, in the Chair; Mr. H. Mossman, Agricultural Instructor, six members and the Secretary. As regards the War Fund, the Society voted the sum of ten shillings to be supplemented by contributors from the members. A very hearty response was made to this and an additional amount of five shillings was immediately collected. The President promised to attend as Delegate the next general Half Yearly Meeting of the Parent Society. The Instructor at this stage addressed the meeting. His subject was based on the history of sugar and was very interesting and instructive. He pointed out that if the small cultivators would adopt the system of putting up their sugar in barrels instead of tins, they would be better remunerated. The district is one, he said, in which much could be attempted and obtained by agriculture, if the spirit of cooperation existed. He went on to deal with the progress of the war and showed how the moral consequences were at work in moulding the minds of men into a better condition. After a few questions from members were answered, the President on behalf of the Society, thanked the speaker, and the meeting then adjourned. J. M. COUSINS, Secretary.

ENFIELD (St. Mary).—The regular monthly meeting was held in the Schoolroom on the 9th December, 1914. There were present: Rev. W. S. Taylor, presiding; the two Vice-Presidents, the Treasurer, the Secretary and 11 other members. The President welcomed the members as usual, and in the course of his address, he touched upon the present European War. He also reported that £6 10s. 2d. was sent from this district as contributions to War Fund; of this amount £2 2s. 0d. was given by the Branch. A letter from the Secretary of the Parent Society was also read, and dealt with.As business arising out of the minutes, the question of the grindstone was settled definitely. The letter from the Clerk of the Parochial Board *re* the application that was made to that Board from this Branch to have certain perennial streams in this district put under protection from pollution was read. This letter aroused a very lively discussion. After several members had expressed their views on the subject, it was put to the vote and carried that the streams be protected. The President was unanimously appointed to represent the Branch at the next Half-Yearly General Meeting to be held in January next. The roll was then called and the meeting was brought to a close with prayer and singing of the Doxology. J. Z. JOHNSTON, Secretary.

MORAVIA (Manchester).—The Branch met in the Schoolroom at 4 p.m. on the 10th December, the President, Rev. W. Z. Getfield, in the Chair. There were also present Mr. S. A. Schleifer, Agricultural Instructor, and about 20 members. On the motion of the Instructor, Mr. J. N. Simpson was introduced as a new member. He was afterwards elected unanimously as Secretary and Treasurer. The Dry Sugar Industry which was laid over from last meeting was fully discussed. It was finally agreed that the small settlers should plant as much cane as they could, clean up old fields and make the tin sugar, which may be bought by the estates, which are in a better position to do the required drainage. Mr. Forbes, one of the members' during the discussion, brought out an important point and that was the planting of trees to form fuel, such as bamboos, the Brazil wood and any such woods as would grow quickly, to aid in the manufacture of the sugar. The Instructor then advised

the members to plant such useful trees as Eucalyptus, which can be obtained at the Hope Gardens, Cedar and Mahoe—these for shingles, scantlings and boards. It was finally adopted that each member give at least a threepence to obtain plants of the Eucalyptus, and that from the fund of the Society half a dozen of the same plants be procured to be planted on the Moravian Mission premises, so as to encourage people to cultivate hard woods which were getting so scarce. It was proposed and unanimously agreed upon that a committee be formed for the purpose of drafting petitions for the improvements of the roads leading into the Moravia, Alston and the neighbouring districts. It was agreed that a petition be sent to the Government beseeching them to have the road leading from Christiana through Moravia looked after at an early date. The pruning of coffee was next dealt with by the Instructor He also urged the members to be in readiness for the judging of the Barbecues to come off in February next. He also advised the members to look after their animals more closely and how to treat them as "Foot and Mouth" sores were troubling them in some parts of the parish. The pruning of bananas was also dealt with. A vote of thanks was conveyed by the President to the Instructor for his invaluable services He suitably and briefly replied. The National Anthem terminated the meeting.

J. N. SIMPSON, Secretary.

ST. JOHNS (St. Catherine).—A regular meeting was held on the 10th December. Ten members, including the Instructor were present. A letter from the Parent Society relative to the representative of this Branch at the Half Yearly Meeting in January next was read. The contents of a circular relative to contributions to the War Fund were debated. It was finally agreed that the Treasurer find out the amount to the credit of this Society in time for next meeting in order that something definite might be done. Mr. Mossman then delivered an interesting lecture on the consequences of the War. This was listened to with rapt attention. He pictured the sufferings of those at the front as well as the wants of the orphans and dependent widows. He also gave a review of his past lecture and urged all to plant the sugar cane largely, promising to procure mills and boilers for them until they had reaped their crops, then these could be paid for. The Secretary in moving a vote of thanks regretted that there were no available lands for cane cultivation, and unless the authorities do something to relieve the situation in the near future, there will hardly be anything like cultivation in this district.

S. A. BANTON, Secretary.

NAIN (St. Elizabeth).—The meeting was held at the usual place on the 11th December, 1914, in the afternoon. Mr. H. W. Lynch, a Vice-President, occupied the Chair. At Roll-call thirteen members answered to their names. Mr. E. J. Smith, Instructor, and the Secretary were present. Correspondence from the General Secretary respecting the Half Yearly Meeting of the Society was read and commented on; as there was no fund in hand to meet the expenses of a Delegate to the next Half Yearly General Meeting, it was agreed that next year and in future, this Branch should set aside a part of its finances to meet the expenses of a delegate to these Half Yearly General Meetings. The Rules governing the sale of Crown Lands as reported in the newspapers were gone through and discussed. At this stage of the meeting, the business on hand was suspended, and the following Resolution was moved, seconded, and agreed to, viz: "Resolved that this meeting of the Nain Branch Agricultural Society place on record its deep regret at the loss which this Parish has sustained through the death of the Hon. J. M. Farquharson, Custos of St. Elizabeth and Member of the Legislative Council, and that the sympathy of the Branch be tendered to his bereaved wife and children." In seconding this Resolution, Mr. Smith said, among other things, that "our late Custos' place will not, and cannot be easily filled." A second Resolution was agreed upon by all, as follows: "Resolved that the meetings be held bi-monthly, and that the next meeting be held in January next, and then every two months thereafter." The meeting was then addressed by Mr. H. W. Lynch. His topic was "Rats and Mice." He showed that not only were these pests the medium of every foul and deadly disease or plague, but that they were the greatest enemy we have throughout the island; he showed that if the destruction caused by them in each family in the island were valued at even a penny per day it would amount to an exceedingly high sum. In

moving a vote of thanks to Mr. Lynch for his address, Mr. Smith spoke approvingly of the advice given. The Secretary reported 5lbs. "Paris Green" had been received from the General Secretary for the purpose of destroying caterpillars in the districts, which were destroying plants of all kinds. The Instructor gave instructions respecting its use and advised very careful handling. One of our Authorized Persons complained of not getting his pay for work done for three days in respect to a prisoner convicted. He was advised to get the proper payment form filled up and then present it to the Clerk of the Courts. At 5.45 p.m., the meeting was brought to a close. Sgd. The Secretary, Nain Branch.

SMITHVILLE (Clarendon).—The regular monthly meeting of this Society was held on the 11th December, 1914. There were present: Messrs. W. A. Bryan, (President), F. McLymont, (V.P.,) M. Goulbourne, (V.P.), the Secretary and sixteen members and visitors. The President enquired whether all the members had brought in their subscriptions towards the War Fund. As they had not all done so, he urged upon them the necessity of speedily doing so. He also brought to their notice the matter of a combined picnic which is being arranged for to take place at Mocho, in aid also of the War Fund and extended a cordial invitation to all. The Social meeting in connection with this Society was fixed for the 29th instant. Arrangements were also made for the erection of the new grindstone. The President next read a letter from the Instructor *re* the Cocoa Demonstration at Frankfield on the 31st instant, and suggested that as Smithville is a Cocoa District, the members should rise to the occasion and endeavour to carry off many of the prizes. The matter of DePass's Gully becoming a source of Public Water Supply was again brought to the meeting and the Secretary informed them that the way has been paved, for notices are being put up relative to the same matter. The subject of Cane Sugar again came in for discussion and the Secretary was instructed to write to the Instructor asking him to ascertain from the Estate Owners whether they would give the matter of purchasing the tin sugar from the small settlers their kind and favourable consideration. Mr. Robert Pink gave notice that at the next meeting he will bring forward a motion *re* a Road Headman to reside at Smithville. The President complimented the members on their turning out in such a large number, and after speaking on the work of the Society generally seized the opportunity of wishing them a "Happy Christmas." He asked them also to remember the Soldiers at the Front and the poor Belgian sufferers, in their prayers. The National Anthem was lustily sung and the meeting terminated. J. A. EDWARDS, Secretary.

PORT ROYAL MOUNTAINS (St. Andrew).—A special meeting was held on the 12th December. There were present: Mr. Robt. Robinson, who was voted to the Chair; sixteen other members and the Secretary. It was agreed that the Secretary take immediate stepsto remind the Secretary of the Parent Society that the letter to the Board of Management imploring the Board to grant relief-seeds, still remained unanswered. It was decided that the he-goat purchased from the Secretary of the Parent Society be sent for on Wednesday, the 15th instant. It was also decided to pay 2/6 each to the men, a part of the money to be paid in advance. The Rev. E Mair explained that no definite reply has been received from the Government *re* relief works for the distressed people. The conditions of this and surrounding districts were discussed and pronounced "serious." The regular monthly meeting will take place on the 26th instant. H. J. CROOKS, Secretary.

WHITEHOUSE (Westmoreland).—Owing to heavy rains the meeting was held on December 15th. The attendance was poor, but those present were well repaid for coming. The members signed a petition for a telephone service. Instructor Somerville then delivered a lucid and interesting lecture on the diseases of plants. He dealt with scale insects, the coconut diseases, and rot in cocoe heads. He gave simple directions as to the treatment of the several diseases and impressed on all the necessity of prompt action so as to save the trees that are not badly gone. He was thanked for his fine lecture. A discussion on Rats is on the Agenda for next meeting. Several members reported the good results of keeping corn by applying Napthaline. Meeting closed with the National Anthem.

M. HEWITT, Secretary.

MAHOE HILL (St. Mary).—The monthly meeting was held iu the Schoolroom on Tuesday, 15th December, at 4 p.m. Present: Rev. T. Lawrence, President; the Treasurer, six other members and the Secretary. Letter from the Secretary of the Parent Society referring to the Half-Yearly Meeting of the Society, to be held in January, was read and considered. The Secretary was chosen as Delegate. Matter about Prize-Holding was considered as there were two applicants. Others said they could not do so as it requires a good house on the land, before one can compete. The Secretary was instructed to make inquiry. Resolutions: Moved, seconded and carried:—To remind the Hon. R. P. Simmonds of his promise to ask the Governor to put on the estimate money for improving the road next year. Moved, seconded and agreed:—That the attention of the P.W.Dept. be called to the inconvenience caused to pedestrians when the Brooks on the junction road between Broadgate and the U.M.F. Church are flooded or flowing strongly; and asked that stepping stones be provided. Next meeting on Thursday, 7th January, to be held at Broadgate. Matters relative to the Half-Yearly Meeting will be considered. Meeting closed with National Anthem. W. A. SIBBLES, Secretary.

PORUS (Manchester).—The usual monthly meeting was held in the Church Schoolroom on December 17th, 1914. Present were: S. A. Hendricks, Esq., (presiding), Mr. Thomas Powell (Instructor), the Secretary, and thirteen members. Arising out of the minutes: the War Fund; the President explained that it was no fault of the Treasurer, Mr. Lindsay, why it was not published in the newspaper. The question of authorized persons was brought up by the Rev. Somerville, but no report was sent in by any of them. It was moved by C. Rowland and seconded by A. S. Rose that Mr. Samuel Robert, a member of this Branch, be recommended as an authorized person for the Comfort District, Williamsfield P.O., which was agreed to. The Instructor gave an address, in which he said that the sweet potato would be a more profitable concern in this locality than the Irish potato and the latter would require plenty of manure, and in planting the sweet potato you should not take slips promiscuously, but good tubers should be selected and set out, and take slips from those and plant out, which would mean an improvement in the bearing, The land should be forked and bedded and planted out fifteen inches apart. The President corroborated the Instructors statement; he has tried the bed system and he got very good results. A vote of thanks was moved for the Instructor by the President, which was unanimously carried. As this would be the last meeting for 1914, the President availed himself of the opportunity of wishing the members a merry Christmas and a Happy New Year; this brought the Meeting to a close.

C. ROWLAND, Asst. Secretary.

PRESTON (St. Mary).—The monthly meeting was held on Friday, 18th December, 1914; Mr. J. Parodie presided. V.P. The Secretary read letters from the Superintendent at Hope *re* cane tops, and from the Secretary of the Jamaica Agricultural Society *re* amount paid in to War Fund. Owing to the severe drought and the war on the European Contitnent, food and money are rather scarce as all work is being practically shut down. Seeing the critical position in which the people are in, financially and otherwise, relief woek was considered necessary; a letter was sent to the Parochial Board asking that Road No. 4 be taken over as a main road so as to afford relief work, with the request that the same be forwarded to His Excellency the Governor for decision. Mr. Amiel asked if the Prize Holding Competition for the Preston district could not be deferred to February, 1915, instead of January, so as to afford the competitors a little more time to attend to tbeir holdings. The Secretary was asked to write the Instructor for the district on the subject. The grindstone that was bought for the Society has been put up and is in use. The Chairman suggested the procuring of a Spraying Machine, which may be essential to the members. The suggestion was considered important. Mr. Alex. Clarke's motion on the extension of time for the repayment of loans was discussed. Borrowers are experiencing much strain to meet the repayment of thier loans as there is no means of realizing to satisfy these demands and crops next year will be late. It was agreed that the borrowers form a committee among themselves and draft a letter to the Loan Committee asking that body to extend the time for the repayment of loans. Next meeting 8th January, 1915. I. M. WILLIAMS, Secretary.